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The Gates or Chicago speculative element remains in control of the American Steel and Wire Company, the New York banking element, represented by the Seligmans, resigning from the board this week. We may add that the stock remains a good one for investors to keep away from—it is loaded.

We are informed on the best authority that contracts have recently been closed for pig iron for export to Great Britain, the deliveries to run into 1901, at a price only 2 shillings (50 cents) below present quotations. This looks as if the English buyers did not expect any great reduction in prices, or any break in the iron market.

The New York police court has refused to hold John W. Gates for trial, on the ground that the charges made are not sufficient to bring the alleged offense under the terms of the statute. The chairman of the American Steel and Wire Company is therefore free from legal prosecution for the present. It is stated, however, that new charges will be made, and the accusers will not give up the attempt to apply the law to this case.

The coal imported into Chile last year was 661,669 tons, of which only 3,200 tons were from the United States. We ought to furnish a very much larger proportion, but we will hardly do it until we become buyers of ores and other products from that country. English coal goes there, because Chilean ores go to England for treatment. We believe there is a chance now to change this materially, and we hope our people will take advantage of it.

Apparently the Boston plan of furnishing gas is to be tried in New York. A company called the New York By-product Coke Company has been organized with $6,000,000 capital to build and operate coke ovens and furnish gas. The list of incorporators of the company includes some substantial names, and at least one of them—Mr. Robert C. Pruyn of Albany—is a director of the New England Gas and Coke Company, which is now operating near Boston.

We are informed on good authority that the exploration work at the Mountain Copper Company's mines at Keswick, Cal., has thus far failed to develop any extensions of the ore bodies from which the supplies for the smelter are now being drawn. The reserves of ore are gradually being worked out, and the limit must in time be reached. The ore in sight is sufficient for two or three years' supply, and if no new discoveries are made within that time the life of the mine will be short.

The accident to a blast furnace in Alabama, which is recorded in our news columns this week, is an indication of the state of the iron trade. The furnace had been long at work, and the need of repairs was evident some time ago, but there was also a demand for every ton of iron that could be made. The furnace was evidently kept at work with the hope that it would hold out a little longer, and finally gave way because it was worn out and the work called for exceeded the endurance of materials.

It is to be regretted that the present session of Congress will probably close without any legislation on the land laws as applied to Alaska. The uncertain state of the law in relation especially to the peculiar conditions found in the Nome District is going to cause a great deal of trouble. A large number of people are going to that region this spring, but they will find almost the whole country already located in some fashion; though it is quite uncertain how those locations will hold in law. Apparently the lawyers will have the biggest share of the gold from Nome, for there is a prospect of endless litigation over claims.

Now, when prospectuses and advertisements of Nome mining and prospecting companies are being brought out on a very liberal scale, it is of some interest to inquire what has become of the Klondike companies which were organized in the East with big capitals—on paper—two or three years ago, and which made such a brave show at the time. A little investigation shows that they have, almost without exception, disappeared and left very little trace except in the pockets and bank accounts of their stockholders. Much gold has come from the Klondike and money has been made there, but not by stockholders of the corporations which were formed chiefly to sell shares in New York and London.

The terrible disaster at Scofield, Utah, detailed comment on which will be found in another column, has aroused the sympathy of the nation. Though the people of Utah have shown the greatest sympathy in coming to the aid of the widows and orphans left destitute, yet the burden is greater than they should bear, and contributions from out

the State are welcomed. While such liberal gifts as those of the Rio Grande Western Railway or of the Colorado Fuel and Iron Company may not be duplicated, there is opportunity for all generous persons to help relieve suffering and keep away want. Contributions may be sent to J. T. Hammond, of the Central Relief Committee, Salt Lake, Utah, or to Spencer Trask & Company, 27 Pine Street, New York City.

There seems to be a general feeling that the boom in business has reached its culmination, at any rate so far as prices are concerned, and that any change now must be in a downward direction. This is shown by the fact that the reduction in prices ordered by the American Steel and Wire Company was followed by weakness, not only in steel and iron quotations but in those of copper and other metals. This was shown, although wire prices were well known to have been unduly high, and that it was well understood that the whole business was intended chiefly to affect the stock markets. It is probably true that prices have passed the highest point; but it is also true that business continues very active, and reductions will come slowly and gradually.

The list of papers and reports to be presented to the International Congress of Mining and Metallurgy which will meet at Paris in June is an interesting one. The papers promised thus far are chiefly by French and Belgian engineers, but a number of Americans will be present, and will take part in the proceedings. Several of the reports will have reference to American practice in mining, and it will be interesting to see the views which French engineers take of our methods and appliances. We may note, by the way, that a considerable number of foreign engineers have visited this country during the past year to study the progress and development of different branches of our mineral industry.

While the cable reports that the gold mines of the Rand have been prepared for wrecking, by dynamite, we cannot believe that so intelligent a people as the Boer leaders will attempt to destroy them. That would be senseless vandalism, for after the war the Boers will still live in the country and earn their living there, and to decrease the opportunity for earning their living and to increase their taxes to pay for willful destruction of private property would certainly not be a patriotic course. Civilized men do not burn down or blow up houses because among their many inhabitants there may happen to be one or two men who have done the aggrieved party some wrong—real or imaginary.

It seems evident to the rest of the world that the resources of the Boers are quite inadequate to accomplish what their government undertook, and whether their war is just or unjust—about which there are, and will continue to be, differences of opinion—there can be no doubt that the best thing for the Boers themselves, when it becomes clear to them, as it is already to others, that they cannot win, will be to stop the useless waste of life and property and help to build up the country as rapidly as possible.

They will always have an equal say, according to their numbers, in the administration of the country as they do now in Cape Colony, and the less private property they now destroy the less will their country have to pay for after the war. Revenge may be sweet, but it is certainly very foolish when it hurts ourselves rather than our enemy.

THE MINE EXPLOSION AT SCOFIELD, UTAH.

Speaking broadly, mining is not a particularly dangerous occupation, though often regarded as such. The public forms its opinion not from the actual percentage of persons killed or injured while at work, but from rare occurrences, when the lives of many persons are put in jeopardy in the twinkling of an eye. Coal mining, since it first began in England, has had its share of great disasters, but with the progress of compulsory legislation regarding the care of mines, the ratio of loss of life to the number of men engaged has steadily decreased; consequently it seems almost incredible that the worst accident of recent years, and one of the most fatal in the history of mining, should have taken place within a few days.

The Winter Quarters Mine of the Pleasant Valley Coal Company is situated at Schofield, Utah, about 16 miles up a canyon from the main line of the Rio Grande Western Railway from Colton. The mine is one of the oldest in the State, having been worked for 20 years, and is also the largest producer, the output in 1899 being 438,107 tons. It employed over 340 men. The mine had two main openings, No. 1 and No. 4. The No. 1 workings were the oldest, and the coal was mined as far back as two miles from the mouth of the tunnel. The No. 4, a new opening, was some distance up the creek and at a higher level, owing to the dip of the coal seam. The workings were not as extensive as at No. 1, but gangways connected the two tunnels, giving ventilation and increased facilities for mining. While no mention is made of the manner of working, it would seem that the pillar and room system, or some slight modification of it, was in use. The seam of coal was about 10 ft. thick, and of good quality, though the amount of powder used in breaking it down seems to have been large. Artificial ventilation was provided by a Guibal exhaust fan, with a capacity of some 45,000 ft. of air per minute. The mine workings, in general, were dry, particularly No. 4 tunnel. The ventilation was good enough to cause little or no complaint among the men, and the mine was remarkably free from gas. As a result, things had gone along smoothly for years, and the mine was regarded generally as one of the safest in the State. It was inspected regularly by the State Mine Inspector, who seems to have found little call for complaint on his visits, except that he sometimes found the ventilation not as good as he thought it should be.

On May 1st the men went to work as usual, and there is nothing to show that the company officials had any doubt as to the safety of the mine. At about 10:30 A. M., however, there was an explosion at a point some 2,000 ft. in at No. 4 tunnel. The exact cause of this explosion will probably always remain unknown. It is possible that there may have been a slight accumulation of gas, which caught fire from some miner's lamp, or from a too heavy shot. It is possible also, since some of the miners had been in the habit of taking in large supplies of powder and storing it near where they worked, that a supply of powder in some way exploded. In any event, the result of this explosion was appalling. A cloud of dust stirred up by the explosion was ignited, and the flame spread through the dust always in the air down the gangways with frightful effect. A boy who happened to be entering the tunnel with a trip of cars met the full force of the explosion. He was blown a distance of over 400 feet, escaping, singularly enough, without fatal injury. Mine timbers, brattice, air stops and doors were blown to bits, a considerable area of ground near the explosion caved in, and the circulation of air was completely deranged. All men within immediate radius of the explosion were instantly killed, only a few near the tunnel mouth escaping, and the bodies were often frightfully mangled.

Owing to the interruption of ventilation, the immense volume of gas generated by the burning dust, principally white damp—CO—spread down the connecting gangways to the No. 1 workings, where about three-fifths of the men underground were busy. It would seem that many of these men were unaware that any explosion had taken place, and had no warning of their danger, except the giddiness produced by the gas, and were overpowered before they had a chance of getting away. The young surveyor of the mine, for instance, was found dead by his transit, which was not in the least disarranged. As the men had almost no warning, the number that escaped from the mine was insignificant, and the disaster became one of the most terrible on record. In all, 250 bodies have been recovered, with the possibility that a few more may yet be found. Such appalling loss of life has called forth expressions of sympathy from the President of the United States and from several foreign countries. The people of Utah have rallied generously to the support of the families of the victims, and contributions to the aid fund are coming in from outside the State.

A coroner's jury, which was promptly assembled, returned the verdict, all too common, of "no one to blame." Various theories, as we have stated, are given as to the origin of the explosion and on whom the responsibility for it should rightfully fall. There has been little disposition to blame the company, which seems to have complied with the mining laws of the State, and little disposition to find fault with the State Mine Inspector, who seems to have performed his duties efficiently.

In attempting to apportion the blame, several points are to be noted. Utah has a dry climate, and in most of the mine workings water gave little trouble, particularly in the No. 4 tunnel. The mine was worked vigorously, the output was heavy, and the artificial ventilation provided apparently had not been increased in proportion to the opening of new rooms and gangways. In this respect the company would be to blame, but there had been little complaint of bad air, and gas was practically unknown, consequently there was no great pressure to increase the amount of air supply. Apparently there was no persistent and systematic search for gas. The statements of various miners and of the State Mine Inspector show that the haulage ways were often very dusty, and that there was a larger percentage of coal-dust in the air than should have been the case. Everything goes to show that the conditions for a coal-dust explosion were ideal, and only an initial explosion was needed. Whether this came from a slight accumulation of fire-damp, a small percentage of which makes a very explosive mixture with dust, or whether it started from an explosion of powder, is immaterial. Dangerous conditions existed which should have been suppressed. The company seems to have realized the possibility of trouble, and, according to some statements, had men whose duty it was to wet down at intervals the dust in those places where there was complaint. The very fact that the mine was regarded as safe may have led to the slighting of this work, which clearly was not done as systematically nor as thoroughly as it should have been. Fol-

lowing the recent disasters in West Virginia and in Washington, the accident emphasizes the necessity of more stringent mining regulations in most of the coal mining States. It is not enough that the law requires that a mine shall be inspected regularly for gas; the volume of air circulating through the workings should be sufficient to prevent the accumulation of explosive mixtures of gas and dust, and the coal company working a dry mine where dust is liable to accumulate should promptly install sprinkling apparatus, and the mine foreman should be required to see that this apparatus is used. The fight against dust should be as unceasing as that against gas. European collieries are so regulated, and similar laws should be passed by every coal mining State in the Union. The expense of keeping down the percentage of dust in the air, in the majority of cases, would be trifling; the relief from danger would be positive and absolute. The least thing that the people of Utah can do is to see that the Legislature at its next session amends the mining law and makes compulsory the systematic sprinkling of gangways. The passage of similar laws in other Western States, and also it would seem in West Virginia, should be followed by the appointment of mine inspectors of courage and efficiency who can be relied on to show no favors and are not the creatures of machine politics. There is still another way to secure efficient administration of mining, namely, by holding the operators responsible pecuniarily for the loss and damage occasioned by such "accidents," at least where they have not been caused by the contributory negligence or disregard of rules by the men themselves. The operators may be depended on to have the mine always in a safe condition if they are responsible for the results where a mine is not safe, as in this case.

NEW PUBLICATIONS.

"Conversion Tables of Weights and Measures and Foreign Moneys." Philadelphia; the Philadelphia Commercial Museum. Pages, 32.

This is a very convenient little pamphlet, issued by the Philadelphia Commercial Museum for the use of merchants and others concerned with foreign trade. It contains tables which will save a great deal of calculation and much time. It has an introduction which has especial reference to the metric system, for the managers of the Commercial Museum recognize, like all who have anything to do with foreign trade, the advantages of that system, and know how desirable it will be for us to adopt it.

"Rapport General sur la Situation de l'Industrie Metallurgique en 1898." Charleroi, Belgium; F. Henry-Quinet. Pages, 100.

This is a report prepared for the Association des Maitres de Forges de Charleroi. It is intended to be a summary of the iron and steel industry and to give the members of the Association the statistics of the trade in various countries, with notes on metallurgical progress. Belgium and France naturally receive most attention, but other countries are considered also, and much is said of the iron industry in the United States. The report also devotes a good deal of space to strikes and the condition of workmen. It has been very carefully prepared, and contains much useful information.

"Notes on Paraguay." Edited by Enrique Plate. Buenos Aires, Argentina; A. Lennox-Samson. Pages, 36. Price (in New York), 70 cents.

This pamphlet gives some interesting particulars about the climate, soil, natural resources, population and trade of Paraguay—a South American country which is almost unknown to most of our people. The soil and climate of the country are excellent; the people are agriculturists and stock raisers almost entirely, and no mineral industry exists. A large part of the pamphlet is given up to a discussion of the merits of "yerba mate," the national drink, which the author believes should be more widely known and used in other countries.

"The Calculations of Anatytical Chemistry." By Dr. Edmund H. Miller. New York; the Macmillan Company, and London; Macmillan & Company, Limited. Pages, 184. Price, $1.50.

This is a text-book intended for use in scientific schools, in connection with courses in analytical chemistry. Its object is to give a logical treatment of the calculations required of an analyst. It contains a large number of examples and many tables, all being made as practical as possible in order to connect chemical laws with practical work. Formulas have generally been avoided, the object being to induce the student to consider each problem individually and solve it from a knowledge of chemical laws. The text-book is well planned and arranged, and will be found an excellent aid to students in chemistry.

"The Technic of Mechanical Drafting: A Practical Guide to Neat, Correct and Legible Drawing." By Charles W. Reinhardt. New York; the "Engineering News" Publishing Company. Pages, 36; with plates. Price, $1.

Mr. Reinhardt is evidently a good practical draftsman, and his book contains many things that will be of use to the draftsman, whether still a beginner or of long experience. It is not a work on design and avoids mathematics, the intention being—as the title indicates—to give the draftsman advice and instruction on the technic of his work. The author's remarks in his preface on the tendency of draftsmen and engineers to slight their work in the execution are very just, and should be carefully considered. At the same time, he does not favor needless elaboration and ornament, although he believes in good work. There are very few draftsmen who cannot go over Mr. Reinhardt's work with profit to themselves and find something worth knowing.

It is not a complete work on mechanical drawing, for such a work has never yet been written, and possibly never will be; but it is a very acceptable guide and is worth having.

"Maryland Geological Survey: Volume III." William Bullock Clark, State Geologist. Baltimore, Md.; the Johns Hopkins Press. Pages, 544; illustrated.

This volume, the third issued by the Geological Survey of Maryland, is devoted entirely to the question of highway improvement in the State, which is certainly one of great practical importance to its people, and has a certain direct relation to its geology. The best methods for construction and maintenance of roads depend very largely on the soil which furnishes the foundation and on the materials readily obtainable for road making; and these come within the geologist's province.

The subjects discussed in the volume include the relations of Maryland topography, climate and geology to highway construction; the history of the development of Maryland highways; the present condition of the roads and best means for their improvement; the relative values of the different natural road-building materials in the several counties; the importance of good roads to the people and the methods of highway construction employed in the counties of Maryland, in other States and in foreign countries. It is a complete study on the subject, and will doubtless be of much value to the people of the State. It is also of interest to all who are concerned in the question of road improvement; we do not know of any volume in which it has been more thoroughly and systematically treated.

"Field Testing for Gold and Silver." By William Hamilton Merritt. New York; the D. Van Nostrand Company, and London; Crosby Lockwood & Son. Pages, 144; illustrated. Price, $1.50.

This book, the author says, is the outcome of classes held for prospectors, and is an attempt to provide a compact and convenient text-book which the mining man could have constantly with him for reference. Originality is not claimed, though there are many suggestions which are new scattered through its pages. It is divided into three parts, the first relating to the different methods of testing ores which can be best employed with the limited outfit which a prospector usually has at his command. These include the pan, the blow-pipe and the field furnace, with their appurtenances. The uses of these appliances are fully described, and some space is also given to tests by amalgamation, by chlorination and by cyanide.

Part II. is a condensed summary of practical mineralogy, or at least of that mineralogy which is likely to be of direct service to the prospector. In it "only so much chemistry is given as is involved in the comprehension of what a mineral is; sufficient mineralogy to enable one to look up a mineral in a text-book, together with some simple confirmatory blow-pipe tests; and enough geology to comprise the characteristics of the more common rocks."

Part III. is a supplement, containing a glossary of useful mining terms and a list of the common rock-forming minerals and rocks. The whole makes a convenient little manual which will, no doubt, be welcome to many prospectors and others.

BOOKS RECEIVED.

In sending books for notices, will publishers, for their own sake and for that that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.

"Thirteenth Annual Report of the State Mine Inspectors of Missouri." For the Year Ending June 30th, 1899. Jefferson City, Mo.; State Printers. Pages, 412.

"Papers Read Before the Engineering Society of the School of Practical Science, Toronto." Toronto, Ont.; published for the Society. Pages, 228; illustrated. Price, 50 cents.

"Enrichment of Mineral Veins by Later Metallic Sulphides." Bulletin of the Geological Society of America. By Walter Harvey Weed. Rochester, N. Y.; published by the Society. Pages, 28.

"Treatment of Copper Mattes in the Bessemer Converter." By James Douglas. Reprinted from the "Proceedings" of the Institution of Mining and Metallurgy. Chicago; Fraser & Chalmers. Pages, 56; illustrated.

"Les Charbons Britanniques et leur Epuisement. Recherches sur la Puissance du Royaume Uni de Grande Bretagne et d'Irlande." Par Ed Loze. Paris, France; Ch. Beranger. Two volumes, pages 560 and 670; with maps and diagrams.

CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials will only be published when so requested.

Letters should be addressed to the MANAGING EDITOR.

We do not hold ourselves responsible for the opinions expressed by correspondents.

The Assay of Antimony.

Sir: As the assay of antimony, especially in oxidized ores, presents some difficulties owing to the sparing solubility of its oxides in mineral acids, it may be of interest to some of your readers who are interested in analytical work to know that I have discovered a ready means of obtaining the oxides of this metal in solution.

From ½ to 1 gram may be treated in a beaker with from 15 to 25 c. c. of concentrated hydrochloric acid, heated to boiling over a good spirit lamp, and, while boiling, crystals of iodide of potassium are added from time to time, and the solution agitated. The addition of about half a dozen crystals in as many minutes will usually be sufficient to render all the oxide of antimony soluble.

The antimony may be precipitated in the metallic state by means of metallic zinc from the diluted solution and weighed as such; or, after adding tartaric acid and diluting, the solution may be treated with

an excess of potash, the copper and iron group of metals precipitated by a current of H_2S, and the antimony precipitated as sulphide by rendering the filtrate from these metals acid, with a large excess of oxalic acid, and boiling. Sulphide of tin will remain in solution. In the case of very impure ores it is advisable to first remove all soluble matter by treatment in nitric acid.

The addition of iodide of potassium to the hydrochloric acid solution reduces antimonic to antimonious acid. The iodine not removed by continued boiling is mostly precipitated on the addition of tartaric acid before dilution.

I trust this may be of service.

Arthur Chippendale.

Sultepec, Mex., April 25, 1900.

The Occurrence of Vanadium in Coal Ashes.

Sir: There appeared an article in your valuable "Journal," February 24th, 1900, referring to the occurrence of vanadium in the ashes of certain coals mined in the Argentine Republic; and it also suggests that the question naturally arises whether vanadium may not be associated with coal in other parts of the world. The ashes from New South Wales coals have been systematically examined in the chemical laboratory attached to the New South Wales Mines Department for some time, and in nearly every case was the rare element vanadium detected. The amount present, however, is very small, and in no case have any of the ashes examined been found to contain more than 0.12 per cent. of V_2O_3, the bulk of them containing traces up to 0.05 per cent. of V_2O_5.

In a sample of coal taken from the Leaconsfield Collieries, near Branxton, N. S. W., vanadium compounds were readily visible, occurring in the fine clay bands through the coal, which was stained a yellowish-greenish color. Vanadium was readily detected in the coloring matter.

The clays and shales around Sydney contain small decimal quantities of vanadium. On being manufactured into bricks, and standing exposed to the weather, the bricks show on the surface a yellow-greenish and reddish stain, which stands out in relief for the color of the bricks in patches, spoiling to some extent the appearance of the buildings. This is more noticeable where light-colored bricks are used.

The compound of vanadium formed, which is probably a vanadate of potassium, is soluble in water, giving a yellowish and grass-green solution, answering all the tests for vanadium. These color-stained bricks are very noticeable on the walls of the buildings in and around Sydney, especially so where light-colored bricks have been used.

It has been found that by burning the bricks at a much higher temperature that the color does not so readily develop.

A large number of the New South Wales iron ores, bauxites and titaniferous iron ores examined were found to contain vanadium. Vanadium appears to be present in a large number of minerals in decimal proportions, hence it is not often sought for, and if a special examination were made it would reveal the presence of the metal in a large number of cases.

An article appeared in "The United States Geological Survey Report for 1895-96," pages 282-283, with reference to the occurrence of vanadium and platinum in the ashes of certain New South Wales coals. An analysis made by Messrs. Thiekell & Company, London, some years ago, gave the percentage composition of ash of sample of coal drawn from bulk as follows: Metallic vanadium, 2.90; platinum metals, 0.23; oxygen (combined), 5.10; sand, carbide of lime, etc., 91.77; total, 100.00. The percentage of ash in the coal was 1.7. It would be interesting to know from what colliery in New South Wales the coal was obtained, as a large number of the coal ashes have been examined for the presence of gold, silver and platinum metals, and a negative result obtained. The percentage of ash contained in this coal is very low for New South Wales coals, the best of which yield from 5 to 6 per cent. of ash—that is, the northern coals.

John C. H. Mingaye.

Clyde, N. S. W., March 24, 1900.

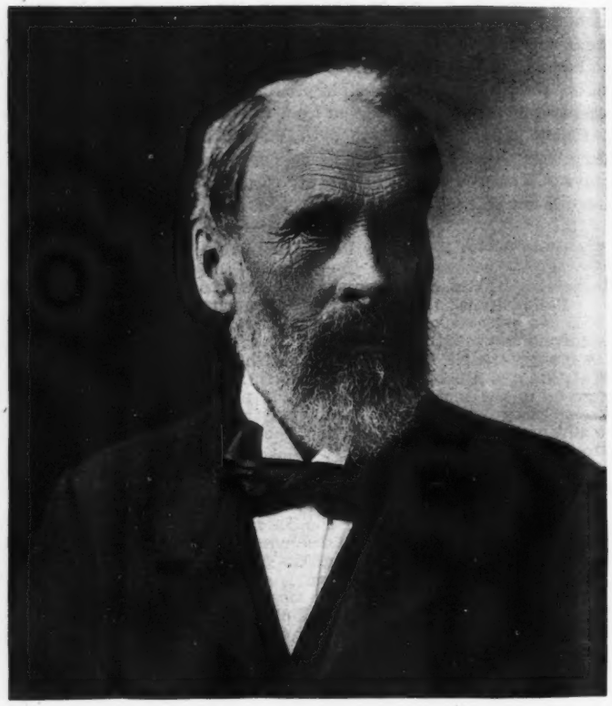
CAPTAIN THOMAS MEIN.

Captain Thomas Mein, one of the best known and most successful of the mining engineers trained in California in the earlier days, died at his residence in Oakland, Cal., May 4th, of congestion of the lungs. He had not been in robust health since his return from South Africa four years ago, but his death was nevertheless unexpected and his last illness was short. Capt. Mein was born in Jedburg, Scotland, in 1838, but his parents removed to the United States when he was only three years old, taking up their residence in St. Lawrence County, New York, where he received his early schooling. In 1854, when he was only sixteen years old, Capt. Mein went to California, and soon afterward took up his residence in Nevada County, where he engaged in mining. He remained in Nevada County for nearly thirty years, and during that time was connected with some of the best known mines in the district, and acquired a high reputation for his ability as a manager. In 1884, at the request of Mr. Hamilton Smith, he went to Venezuela and took charge of El Callao Mine, which was at that time a famous gold producer. He remained five years in South America and returned to California in 1889. He still retained his connection with Mr. Hamilton Smith and his associates, and soon after his return he went for them to Alaska, where he took charge of the Alaska-Treadwell Mine, the operations of which he superintended for two years. While in Alaska he bought up a number of mining properties for the London Exploration Company and for Smith & Perkins, retaining a considerable interest for himself. In 1891 he returned to California, and at that time purchased for himself the house in Oakland in which he died. He still retained his connection with the Alaska mines and was consulting engineer up to the time of his death, as well as a director in the companies. It was under his charge and by his advice that the Alaska-Mexican and the Alaska-United mines were added to the Treadwell group on Douglas Island, and it is to his care and experience that the successful operation of those mines is largely due.

In February, 1892, Capt. Mein went to South Africa, where he was appointed manager of the Robinson Mine, which is now the richest and most noted of all the Transvaal gold mines. Under his charge the costs were largely reduced and the operations of the mine and mill put on their present substantial basis. He was one of the best known and most respected of the American mining engineers who have done so much to make gold mining in the Transvaal a success.

In addition to his work at the Robinson, he acted as consulting engineer at other properties, and had intimate relations with Wernher, Beit & Company. At the time of the reform movement in Johannesburg he was a prominent member of the Reform Committee, the headquarters of which were in his office. After the Jameson Raid he was tried for treason, with John Hays Hammond and others, and was condemned to death. He remained a year in confinement, but was finally pardoned by President Krüger on payment of a large fine. After his release he returned to San Francisco, and, in fact, never fully recovered his health, which had suffered from the African climate and from his long confinement. During recent years he has done no active work, although he still retained his position as consulting engineer and director of different companies.

At the time of his death he was consulting engineer of the Alaska-Treadwell Gold Mining Company, the Alaska-Mexican Gold Mining Company and the Alaska United Gold Mining Company, all of Douglas Island. He was president and consulting engineer of the Alaska-Juneau Gold Mining Company, of Juneau, Alaska; the Oneida Gold Mining and Milling Company, of Sutter Creek, Cal.; the Steeple Rock Development Company, of New Mexico, and the Mariposa Grant, of Mariposa County, California. He was the principal owner of the Commodore Gold Mining Company, of Siskiyou County, California, and a director of the Alaska Exploration Company, which has stations throughout the Northwest.



CAPTAIN THOMAS MEIN.

Capt. Mein was married in 1867 to Miss Mary Swift, in San Francisco. His wife and two children—William W. and Robert M. Mein—survive him.

Capt. Mein was a prominent Freemason, and was also a member of the Pacific Union Club in San Francisco. His judgment as a mining engineer was seldom questioned, and few men were more highly and generally esteemed.

COAL IN SERVIA.—In Servia the coal deposits are rich, the coal being semi-bituminous; but the working leaves much to be desired. The Debra Collieries, between Goulouwatz and Dolni-Milanowatz, contain four coal seams, two of which can be worked easily, the coal of the upper seam, which is 1.5 m. thick, being of good quality. At Sechinsky, 6½ kms. from the Danube, at a height of 300 m. above the river level, the seam attains the thickness of 6.5 m. The coal of the lower seam, which varies from 65 cm. to 1.15 m. in thickness, is of better quality, more compact and less mixed with foreign matter, than that of the upper.

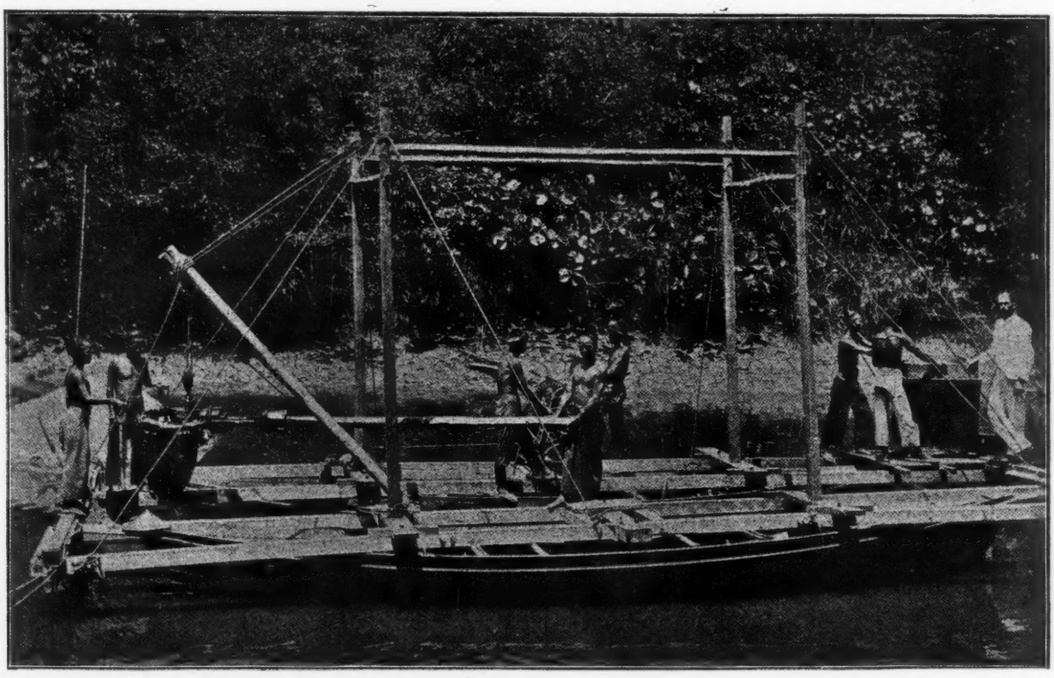
COAL EXPORTS OF GREAT BRITAIN.—The exports of coal, coke, cinders and briquettes from the United Kingdom during March reached a total of 3,853,549 tons, making the shipments for the first quarter of the year 10,274,745 tons, as compared with 9,691,596 tons in the corresponding period of 1899, and 8,508,542 tons in the first three months of 1898. In March, 1899, the exports were 3,462,405 tons, and in March, 1898, 3,079,982. For the use of steamers engaged in the foreign trade, coal was shipped to the extent of 2,939,410 tons during the three months ended March 31st, as against 2,867,304 tons and 2,642,283 tons in the corresponding periods of 1899 and 1898 respectively.

GOLD DREDGING IN BORNEO.

The accompanying illustration, for which we are indebted to the "Australian Mining Standard," shows a dredge arranged and used by Mr. T. R. Toby, an Australian mining engineer, for prospecting river deposits on the Melawi River in Borneo. The dredge was carried on native "praturs," the platform being 35 ft. long and 12 ft. 6 in. wide. The hole through which the dredge was worked was 4 ft. wide. The dredge was of the spoon type and was worked by native labor. The construction of the machine is well shown in the engraving.

With this machine Mr. Toby prospected the river pretty thoroughly, spending three months in the work. Dredging was carried on at intervals of about 10 miles for a distance of 250 miles, and in almost every instance fair prospects were obtained; in a few places the returns were very rich. The river bottom was found to be well adapted for dredging. The wash-dirt averaged 10 ft. deep, while in most places the current did not exceed 4 miles an hour. It is understood that the Sourabaya Syndicate, which holds concessions on the river, will undertake dredging work on a large scale.

The river banks were also prospected, and some promising placer deposits found. Gold in small quantities has been obtained in this part of Borneo for a long time past by native and Chinese workers, but no systematic prospecting has been done, and all the work accomplished has been with very primitive appliances and methods. It is not impossible that with machinery applied on a large scale, Borneo may become a gold producer of importance.



DREDGE BUILT ON NATIVE PRATURS, BORNEO.

THE INTERNATIONAL MINING CONGRESS AT PARIS.

The programme for the International Congress of Mining and Metallurgy to be held in Paris, June 18th-23d, is so far completed that announcement is made of a number of the papers and reports to be presented. These are shown in the list below, and are divided into two general classes:

The first class of subjects, those relating directly to Mines, is divided into six heads, as shown below:

1. The Use of Explosives in Mines.—There will be reports read by M. Delaford, Inspector-General of Mines, France; M. Denoel, mining engineer, Belgium; M. V. Watteyne, director of mines for the Ministry of Industry of Belgium; M. H. Le Chatelier, professor at the College of France.

2. The Use of Electricity in Mines.—Reports on this subject will be made by M. Wendeling, chief engineer for Siemens & Halske, Berlin; and M. J. Lebert, chief engineer of the mines of Namur, in Belgium.

3. Conditions of Mine Working at Great Depths.—Reports on this subject will be presented by M. Hrabak of Germany; M. Stassard, of Mons, Belgium; M. Poussigne, director of the coal mines of Rosschamp. In addition, M. Petit, chief engineer of the Compagnie des Houilleres de St. Etienne, France, will read a paper on the Working of the Thirteenth Level at the Villiers Shaft.

4. Means for Reducing the Manual Labor Required in Mines.—Three reports under this head are announced, as follows:

Substitution of Machines for Hand Labor in the Mines of the United States; by M. Bachellerie.

Tests of Machine Drills in France; by M. Paul Fayol, director of the Mines of Brassac.

Mine Drills in the United States, by M. Chodzko, mining engineer, San Francisco, California.

5. Mechanical Preparation of Coal for Market.—A report on this subject will be submitted by M. Buisson, director of the mines of Commentry, France.

6. Studies on the Development of the Mineral Industry and on Statistical Questions.—Three papers and reports will be presented to the Congress, as follows:

The Mineral Production of the United States, and the Production of Gold in the World; by R. P. Rothwell, Editor "Engineering and Mining Journal" and "The Mineral Industry," New York.

The Iron Ores of South Russia; by M. Szymanowski, director of the Krivoi-Rog Company.

Uniformity in Mineral and Metallurgical Statistics; by M. de Dittmar, chief of the Statistical Bureau of the Miners' Association of South Russia.

The second class—Metallurgy—has three divisions, as below:

1. Progress in the Metallurgy of Iron and Steel since 1889.—Five papers and reports will be submitted:

The Manufacture of Special Steels; by M. Babu, professor at the School of Mines, St. Etienne, France.

The Present Condition of the Manufacture of Thomas (basic) Steel, and Its Effect on Wrought Iron Manufacture; by M. Rocour, manager of the Forges et Acienes du Nord et de l'est, France.

Present Condition of the Manufacture of Steel; by M. Tissot, chief engineer of the Societe des Aciers Robert.

Direct Utilization of Blast Furnace Gases; by M. Hubert, Liege, Belgium.

Phenomena Accompanying the Deformation of Metals; by M. Hartmann, Puteaux, France.

2. Applications of Electricity to Metallurgy.—Under the head of chemical applications a paper on Aluminum at a Low Price will be submitted by M. Heroult, engineer of the Societe Electro-Metallurgique of Froges, France.

Under the head of Mechanical Applications, a paper on the Magnetic Separation of Ores and Minerals will be read by Dr. H. Wedding of Berlin. A report on the Wetherill Process of Separation will be made by M. Sneits of Dusseldorf, Germany.

3. Progress in the Metallurgy of Gold.—A paper on the Cyanidation of Gold-bearing Ores in the Transvaal, by M. Bousquet.

The General Secretary of the Congress is M. Griener, 55 Rue de Chateaudun, Paris; the treasurer is M. de Castelman, 13 Rue Saint-Lazare, Paris.

COKE IN RUSSIA.—A large part of the coal produced in the Donetz Basin in Russia is made into coke. At the beginning of 1899 there were in the region 2,776 coke ovens; during the year 650 new ones were built. The total capacity of the 3,426 ovens is 120,000,000 poods (1,965,600 metric tons) of coke yearly.

RECENT BOILER PRACTICE.—At the last meeting of the American Society of Mechanical Engineers, Mr. Chas. T. Porter, in his discussion of Dr. Thurston's paper on "The Steam Engine in the Close of the Nineteenth Century," stated that it is a principle of the new engineering that "the boiler furnace shall be independent of natural draft, effectually consuming its smoke, and burning two or more times as much coal per square foot of grate as it could do under natural draft alone, and yet sending off the gases at a low temperature; the boiler being a steam generator, a superheater and a fuel economizer combined." This statement clearly shows Mr. Porter's faith in the future of mechanical draft as a substitute for chimney draft as a means of securing the desired ends.

PROSPECTING FOR PETROLEUM IN CALIFORNIA.*

By A. S. Cooper.

Surface indications of the presence of petroleum consist of unaltered rocks, white-leached shales and sandstones, shales burnt to redness, fumaroles, mineral springs and the residue from mineral springs, such as selenite, subsidences, natural gas, springs of petroleum oil and maltha, porous rocks saturated with bitumen, cracks in shale and other rocks filled, or partly filled, with bitumen, black silicified shales. It would seem unnecessary to say that petroleum oil is not found in any notable quantity in metamorphic rocks, and if found at all that it is a secondary deposit. The prospector should confine his attention to unaltered rocks.

The color of the bitumens, when they exist near the surface of the earth, is black, bluish black, brown and dirty brown. Bitumen can be distinguished from coal, vegetable deposits, iron, manganese and other minerals that closely resemble them by the following tests: By its odor and taste; by melting in the flame of a match or candle with characteristic odor (iron and manganese do not fuse, and coal and vegetable matter burn without fusion); by dissolving in bisulphide of carbon, chloroform and turpentine.

It would be well, in prospecting for oil, to carry a small bottle of one of these solvents and another small bottle in which the substance to be determined is placed in a comminuted form and agitated. If a brown or black solution is formed, the substance under examination is bitumen. Iron, manganese, coal and vegetable matter are unaffected by these solvents.

All streams, pools and other bodies of water should be carefully inspected. If oil is present it will float on the surface, showing prismatic colors. Compounds of iron floating on the surface of water frequently show these iridescent colors. Whether this scum is an oil or an iron compound can be determined by stirring the surface of the water with a circular motion. If iron, the scum will break into irregular fragments, and if oil it will form bands of color. In other words, the iron compound seems to act and break like a solid, whereas the oily scum acts like a liquid. Frequently gases are seen to ascend from the bottom of streams and pools of water. In the bed of La Brea Creek, upon the Sisquoc Ranch, Santa Barbara County, gases rise from the bottom of the creek for a distance exceeding 1 mile, which can be lit upon the surface of the water and burn with a luminous flame. This occurs in many other places in California.

Carburetted hydrogen, or natural gas, is a far greater indication of the presence of the bitumens than is sulphuretted hydrogen or carbonic acid gas; consequently, it is frequently important to determine between these gases. Carburetted hydrogen burns with a yellow, luminous flame, whereas sulphuretted hydrogen burns with a bluish flame. A familiar example of the color of these flames is shown in the burning of an ordinary match. Sulphuretted hydrogen has a strong odor and tarnishes silver. Carbonic acid gas does not burn or support combustion.

The following test papers should be obtained and kept dry and well protected both from air and light, in a small, wide-mouthed bottle of dark glass: 1. Acetate of lead paper, which eventually becomes brown when exposed to gas containing sulphuretted hydrogen. If after an exposure of 10 minutes the paper does not become discolored, the gas may be considered free from sulphuretted hydrogen. 2. Blue litmus paper when moistened turns red on exposure to carbonic acid gas, or water highly charged with carbonic acid gas. The tests with the papers can be made as follows:

Procure an ordinary beer bottle of clear glass; run a red-hot poker several times around the neck and near the bottom of the bottle; dip the bottle into cold water, when the bottle will break where the hot poker has been applied. Stop the bottle with a cork through which a small hole has been made. The test paper is suspended in the bottle by a wire fastened in the cork. Leave the hole open and hold the lower and open end of the bottle partially submerged in the water and over the bubbles of gas which are ascending through the water. If sulphuretted hydrogen or carbonic acid is present they will act in the manner described above on the respective test papers which are used to detect their presence. These papers will show the absence of sulphuretted hydrogen and carbonic acid gas, but where they are mixed with carburetted hydrogen the other test will have to be employed, such as the color of the flame when burning to determine whether carburetted hydrogen is present.

To make the test by the color of the flame, open the hole and submerge the entire bottle in the water; after the bottle is filled with water, close the hole and lift the bottle nearly out of the water; the bottle will remain full of water, on account of atmospheric pressure; hold open the end of the bottle over the ascending gas. When the water in the bottle is replaced by gas, sink the bottle nearly to its head in the water; the water will then press upon the gas. Open the hole and ignite the gas. If sulphuretted hydrogen is present, a green flame is seen; if carburetted hydrogen, a yellow luminous flame; if carbonic acid gas, the gas will not ignite; if these gases are mixed, the flame will be more or less yellow and luminous in proportion to the amount of carburetted hydrogen present.

If carburetted hydrogen is found it is nearly a certain sign that liquid bitumens exist somewhere in the formation, although they may be distant from the place where the gas issues.

All outcrops of the stratified rocks should be examined. There are generally better exposures of these rocks on the sides of the streams, canyons and gulches than elsewhere. The surface of the ground should also be examined. If any brown or black material is seen in the seams of the rocks or saturated porous strata, the described test for bitumens with solvents should be made. If natural gas or bitumen is found upon the surface of shale there is a strong probability that the bitumen has ascended vertically through these rocks from porous strata below, as the avenues for the migration of the bitumen are usually seams and cracks in the shale, the shale itself being impervious to the flow of the bitumens, especially the liquid ones. But when porous sand is reached, or when the outcrop is porous sand, it can be presumed that the bitumens reached the surface through the sand. Especially is this liable to be true of the sandstones standing at a high angle with the horizon.

Subsidences are indicative of the presence of petroleum, but if any oil is found in them it will be viscous and heavy, the fractured condition of the earth in the subsidence permitting the escape of the volatile parts of the oil. This is also true of burned shales, and if any petroleum exists in these shales it would be a secondary deposit, having entered the shales after they were burned. Petroleum vapor, in all probability, assisted in the burning of these shales.

As mineral water always accompanies the bitumens, mineral springs and the evidence of former mineral springs are to a limited extent evidence of the accumulations of the bitumens. Selenite, travertine, infusorial earth, and a number of other mineral deposits are evidence of former mineral springs. When bitumens exist in a formation they are more often than otherwise overlaid with white leached shales and sandstones; therefore, these rocks are an indication of the bitumens to a certain extent, and, owing to their conspicuous color, can be seen from a long distance.

*Abstracted from "Bulletin No. 16," California State Mining Bureau.

A REMARKABLE MINE ACCIDENT IN INDIA.

It seems remarkable that a mine which has been so highly productive and profitable as the Champion Reef Gold Mine in the Colar Gold-field, should be so inadequately equipped as an accident which occurred there late in 1897 would indicate. It occurred in what is known as the trial shaft; a two-compartment downcast shaft through which all workmen were obliged to descend or ascend when entering or leaving the mine. The report for 1898 of James Grundy, Inspector of Mines in India, which has been issued only recently, states that the manholes in the ladderway were 2 ft. by 1½ ft. and 2 ft. by 2½ ft. The shaft had an inclination of from 64° to 79° from the horizontal and was 225 ft. deep. The manhole at the top of the shaft was fenced in, and the outlet was in charge of a watchman. The accident occurred on a pay-day, when the men were accustomed to leave the mine at an earlier hour than usual. The watchman, it seems, was a new man and was not acquainted with this, so that when the first native appeared at the top he prevented his leaving the ladder-way. The men quickly accumulated in large numbers in the shaft; some attempted to pass one another, and the air quickly became vitiated by the blocking of the passage and the large number of lights burning. Some of the lights became extinguished and the crowd became a mass of almost exhausted human beings struggling on the ladders in a foul atmosphere, with many in the dark. Some fell off the ladders, and in falling caused others to do so. The result was that 52 men were found dead or dying. Owing to new regulations the matter was not reported to the Inspector of Mines of India, who believes that all the accidents that occur are not reported.

RECENT DECISIONS AFFECTING THE MINING INDUSTRIES.

Specially Reported for the Engineering and Mining Journal.

RESTRICTIONS ON SALE OF "MINING GROUND" IN CALIFORNIA.—When a mining corporation, in good faith, works, by ordinary mining processes, deposits of stone and other mineral on its lands, with a view to utilizing the product for commercial purposes, the land so worked is "mining ground," within the law of that State (Act April 23d, 1890, page 131, section 1) making it unlawful for such corporations to sell, lease or mortgage any part of their "mining ground . . . unless . . . ratified by the holders of at least two-thirds of the capital stock," whether the undertaking is profitable or not, and whether sound discretion would approve of that use of the land or not.—Johnson vs. California Lustral Company (59 Pacific Reporter, 595); Supreme Court of California.

WHEN LIEN DOES NOT AFFECT MACHINERY IN MINE IN CALIFORNIA.—Under the law of California (Code Civil Proceedings, section 1183), which provides that any person who performs labor in any mining claim has a lien on same, and the works used in connection therewith, for his work and labor, a person who has performed work for one who is in possession of a mining claim under contract for its purchase, which contract provided that, if the purchasers failed to complete the contract, they could remove any machinery affixed by them, has no claim on purchasing and permanently attaching same to the mine, though the lessor gave no notice of his ownership, and the lessees of the machinery never completed the contract to purchase the claim.—Jordan vs. Myers (59 Pacific Reporter, 1061); Supreme Court of California.

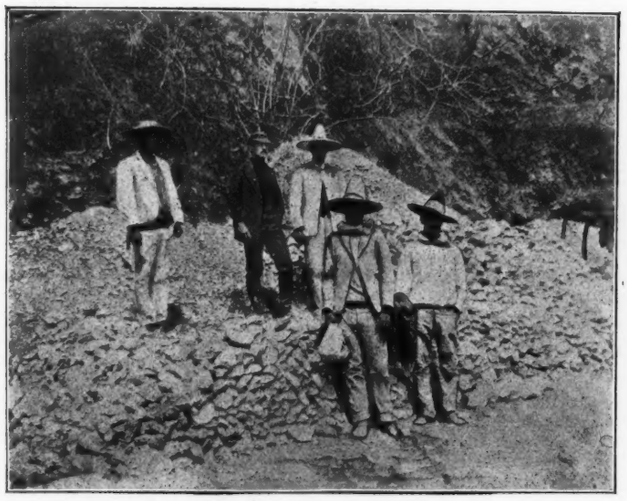
MINING LIENS IN IOWA.—The law of Iowa (Code, section 3105) declares that miners shall have a lien on all property of the person owning or operating a mine, and used in its construction and operation, for the full value of their labor. An owner of coal land leased it, with a provision that the lessee should pay a royalty on coal mined, and that new machinery and improvements which the lessee might add to the mine should not be removed until after the lessor should have had a reasonable time to exercise his option to purchase same. It was held by the court that though the improvements equaled the value of the miners' liens unpaid, the lienors were entitled to enforce their liens against both the mine and the improvements in same, though the owner had failed to collect royalties amounting to nearly the entire value of the improvements. Such law enters into and becomes part of the contract when one leases land to another for the purpose of being worked as a coal mine. Where such liens had been filed, in accordance with the statute, an assignee of such claim is entitled to enforce the lien and recover the penalty and attorney's fees authorized by law.—Mitchell vs. Burwell (81 Northwestern Reporter, 193); Supreme Court of Iowa.

THE GOLD ZONE OF COPALQUIN, MEXICO.—II. COPALQUIN.*

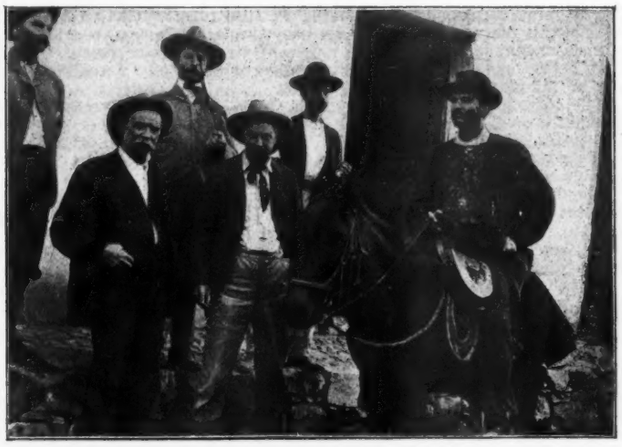
Written for the Engineering and Mining Journal by Frank B. Fowler.

Copalquin takes its name from the abundance of "copalquin" or quinine trees found there, this tree, or rather bush, being none other than that of Peru. The natives, as well as foreigners, resort to an infusion of its bark for all the ills that quinine cures or remedies, and thus save drug bills. The town of Copalquin lies to the northeast of San Fernando, about 15 miles as the crow flies, but it is a day's hard riding, or a day and a half ordinary traveling from the latter place owing to the broken, rugged condition of the country. Its geological peculiarities are similar to those of San Fernando, its physical ones being, however, more pronounced as to general roughness.

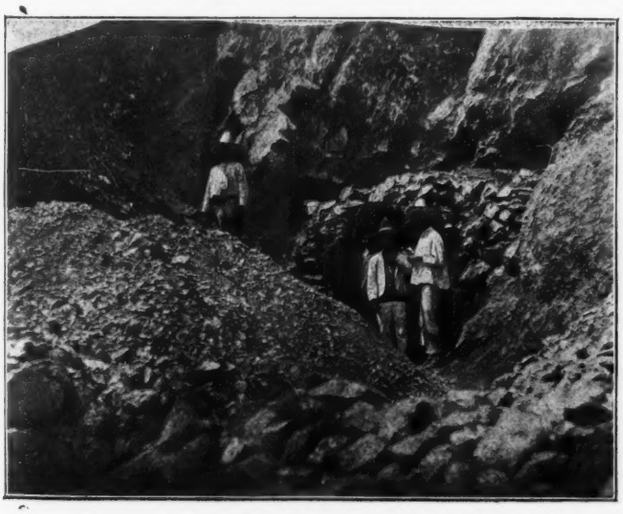
For a very complete description of the geological features of this region, reference is here made to the elaborate report made to the Mexican Government in 1896 by Mr. Ramon Felix y Buelna, a Mexican mining engineer, metallurgist and geologist, and member of the Geological Commission of the Republic of Mexico. He was so favorably impressed with Copalquin as a mineral region that he has located there, and engaged in mining on his own account.



ORE DUMP, EL REFUGIO MINE, MEXICO.



A GROUP AT COPALQUIN, MEXICO.



ENTRANCE TO UPPER TUNNEL, EL REFUGIO MINE.

PART OF COPALQUIN CAMP, MEXICO.

Within the limits of the territory which may be denominated the Copalquin Mining Camp, and embracing the village of Limon, are located the three groups of mining properties owned by the Consolidated Copalquin Mines Company, Limited, or its principals in interest. These groups, the Copalquin, Limon and Soledad, comprising at present 14 different properties, lie within an area of 7 by 2 miles, and in close proximity to the Copalquin Creek and Limon River, which water the camp.

Development work by this company has been mainly confined to El Refugio Mine, although more or less prospect work has been done on some of its other properties, and on others there are old workings of considerable extent, made in former years by native owners in their search for and extraction of bonanza ores.

The Refugio property consists of 150,000 sq. meters, situated in the center of the group of mines owned by the company. It is joined by La Lena Mine, also belonging to the company, which, in turn, adjoins La Soledad Mine, which latter is the property of Mr. Remedios de la Rocha, and which is now in bonanza, being one of the richest producers at present worked in this district.

The Refugio Mine was discovered in 1849, one year after the camp was discovered, and is celebrated as having been the largest producer in this section. The output has been a phenomenal amount of bullion produced during the bonanza period of our own California, and is currently reported to have exceeded $1,000,000 in auroche, or alloy of gold and silver. It is impossible to give the exact figures, as some of the mint records are lost, and some of the bullion stolen and "dissipated."

The principal values extracted were in gold, notwithstanding the then high price of silver in the market. The ore was free milling, and was treated in "tajonas" (arrastras moved by horizontal water wheels of primitive construction), and by this crude method yielded (according to data) as high as 720 lbs. avoirdupois of "auroche" during two months' run, which is said to have been for a time the average output, the richest ore yielding 2,000 oz. per ton, and the lowest grade milled 4 oz. silver and 1 oz. gold per "carga" (300 lbs.).

In March, 1897, Copalquin was visited by the Messrs. Alfredo B. Adams and G. Byron Daniels of Chicago, Ill., which visit resulted in the organization in July of that year of the Copalquin Consolidated Mines Company, Limited, under the laws of the State of New Jersey, and the acquirement of its present consolidated interests. In October, 1897, the work of systematic development upon the Refugio Mine was begun by the company, and prosecuted up to the present time.

The mine is located 350 m. above the Copalquin Creek and 1,130 m. above sea level, and its plan of development is that of self-draining tunnels.

The workings of El Refugio consist of 534 ft. of tunnels, 139 ft. crosscuts, 746 ft. levels, 218 ft. drifts, 562 ft. winzes, and 400 ft. old drifts, etc., besides a large amount of irregular workings where rich pockets of ore have been taken out by previous owners. There is about 50,000 tons of ore in sight in this mine, which, according to exhaustive milling tests, show 12½ oz. silver and 1 oz. gold per ton.

The process of treatment provided for is continuous, and consists in wet crushing, amalgamation in the batteries by means of chuck-block plates, and concentration of the pyrites and silver sulphides upon Frue vanners and Wilfley tables.

The plant now being installed comprises 20 stamps in four batteries, 2 crushers, 7 vanners, and Pelton water wheels. Its capacity will be about 75 tons per day. It was supplied complete by the Gates Iron Works, of Chicago, and is of the most modern and approved type in every detail.

*See "Engineering and Mining Journal," February 24th, 1900, page 225.

The location of the plant as to its natural advantages of space, configuration of ground, etc., both for present and future operations on an enlarged scale, seems to leave nothing to be desired, the site being formed by a bench lying along the hill point which divides the Copalquin and Limon streams.

The company controls the water rights for adequate distances from this point on both these streams, and is thus assured of an ample water supply for all future requirements of power, milling, etc., while an unlimited supply of pine, oak and other woods is found in the surrounding mountains, much nearer and less difficult to obtain than in San Fernando, and abundant pasturage for animals. Oranges, lemons, bananas, peaches and apples grow here, in the order indicated as one ascends.

The present plans of the company include the development of the water power on the Copalquin Creek, where, within a distance of 3,000 meters, a head of 200 meters is obtainable with water at a minimum, to supply 300 H. P. On the Limon River may be developed a still greater power, which, however, will not be needed for the present.

Also, there is included the construction of an automatic cableway 2½ miles in length, for the transmission of the ore from the mines to mill. This gravity cableway is designed to handle not only the present and future output of El Refugio, but also that of the company's other mines, which may be connected with it as desired, in future operations.

The mine is also being prepared for the introduction of tram cars, which will deliver the ore by an easy down grade to the cableway at the main tunnel entrance, and apparently for years to come this mine may be worked by self-draining tunnels, without any necessity for the use of pumping or hoisting machinery.

The company is registered with the New Jersey Registration & Trust Company of East Orange, N. J., which is also the transfer agent for its shares. The capitalization is $1,000,000, divided into 2,000,000 full paid and non-assessable shares, which are not listed by any stock exchange nor placed upon the market.

The officers are: Mr. Alfredo B. Adams of Chicago, Ill., president and general manager; Sr. Atanasio de la Rocha of Copalquin, Durango, Mexico, vice-president; and Mr. G. Byron Daniels of Chicago, Ill., secretary and treasurer; these gentlemen, with two others, constituting the board of directors.

The efforts of Messrs. Adams and Daniels have been continuously devoted to the interests of the company from the start, and to these, and especially to Mr. Adams' intelligent management in the Republic, are due the present success and very satisfactory status of its affairs.

In addition to the improvements above mentioned as being made by this company, is the erection of substantial buildings for business offices, assaying, storage and living quarters for accommodation of its officers and expert employees; also the construction of over 5 miles of good roads.

The present force consists of about 150 natives employed in both mining and construction departments, under the direction of Sr. R. Felix y Buelna, above mentioned, who also acts as the company's consulting engineer and superintendent, assisted by a corps of 5 experts in mining, milling and mill construction, the whole having the personal supervision of the general manager, Mr. Adams.

Besides the properties enumerated above, there are many others, being worked, however, in a most primitive way, and only the rich pockets being exploited.

Ten years ago an American company was in possession of all these properties, but did not seem to appreciate the value of its possessions, allowing them to go by the board, and fall into the hands of the Messrs. Rocha, who have made themselves wealthy thereby. Sr. Remedios de la Rocha is one of the few millionaires in the State of Durango. Atanasio de la Rocha, his son, and vice-president of the above-mentioned Consolidated Company, is also quite wealthy. Another son, Erasmo de la Rocha, is owner of a rich silver and gold mine between San Fernando and Copalquin. A brother of Remedios—Jose Maria de la Rocha—sold to its present owners the fine San Fernando property. Some of this wealth was inherited, but most of it was derived from the mines of this zone.

THE ELECTROLYTIC DETERMINATION OF COPPER.*

By William E. Grainger.

The methods here described are those used in the laboratory of the Ducktown Sulphur, Copper and Iron Company, Limited. In this laboratory there are used three of the best known methods for estimating copper —the electrolytic, the colorimetric and the cyanide, the former being used in all important cases; the others, merely in furnace control work.

There is apparatus for making 10 electrolytic determinations at one time. This apparatus is very simple, consisting of 10 coils of platinum wire, as anodes, and 10 platinum cylinders, as cathodes, supported by an insulated rack in such a way that one cathode and one anode may be placed in each solution to be electrolyzed. As the copper in the solution is to be deposited on the cathodes, they should be perfectly clean and bright and the weight of each should be carefully ascertained before each determination. The weight of the cathode subtracted from the weight of the cathode plus the copper, will give the amount of copper deposited, and from this is calculated the percentage.

In the preparation of samples, different methods are used. Mattes and unroasted (or green) ores are ground and passed through a 60-mesh sieve, while in the case of roasted ores and slags an 80-mesh sieve is used. In many cases the dissolving of the sample is by far the most difficult part of the operation. Samples of matte, green ore and chilled slag are very readily attacked by acid, but with roasted ores the task is not so easy, from the fact that some of the oxides formed during the roasting are almost insoluble in acids. However, experience has shown that, if the samples are put through an 80-mesh sieve and then given a long treatment with aqua regia, all the copper will be dissolved out. We have tested this point time and again by fusion of the insoluble residue and testing for copper, very seldom even a trace being found.

*Abstract of paper in the "Record" of the University of Tennessee.

As samples, one-half gramme matte and one gramme of slag and ores are used—the treatment in all cases being nearly alike, excepting the amount of acids and the order in which they are added. One very important point in all electrolytic work is to keep the volume of the solution small. For instance, the following directions are observed in the case of mattes: After weighing the sample into a small beaker, slightly dampen it with distilled water; cover the beaker with a watch glass and add 7 c. c. of nitric acid. When the violent action has ceased, add 3 c. c. of hydrochloric acid and boil down nearly to dryness. Cool, add 7 c. c. of sulphuric acid and again heat carefully, with occasional shaking, until choking white fumes appear, indicating that all the nitric and hydrochloric acids have been expelled and the sulphuric acid is being driven off. Cool, add about 20 c. c. of water and heat again to dissolve the soluble sulphates. The solution, still hot, is now filtered to remove all sulphur, silica and insoluble residue, the filtrate being retained in a No. 2 beaker, its volume being from 100 to 150 c. c.

In the case of slags, after weighing the sample, cover it in the beaker with about 10 c. c. of water, and boil vigorously for 3 or 4 minutes. This treatment aids very materially in obtaining a clean, white silica. Add 10 c. c. of nitric acid and 7 of hydrochloric acid, in the order given, boil nearly to dryness, and add 7 c. c. of sulphuric acid. Complete the treatment as given for mattes.

With roasted ores a long treatment is necessary, from 10 to 15 c. c. each of nitric and hydrochloric acid being added, and slowly boiled down nearly to dryness before the sulphuric acid is added. The treatment for green ores is exactly like that for slags, except that the hydrochloric acid is added first, thus getting rid of much of the sulphur as hydrogen sulphide.

As has been before emphasized, in filtering the solutions great care should be taken in keeping the volume of the filtrates small and still washing the filter papers thoroughly. The larger the solution the longer the current of electricity must pass to do its work. After filtration, the solutions are made neutral with ammonia in order to get rid of the excess of acid. When 2 c. c. each of nitric and sulphuric acid are added, the solutions are thoroughly mixed and are ready for electrolysis. In regard to the neutralization of the solutions with ammonia, some writers claim that the presence of ammonium salt retards the deposition of the copper. This may or may not be the case. However, results at Ducktown are so much more satisfactory that we can afford to waste a little time in this way.

After the current has been passing through the solutions during the night, in order to find whether or not the copper is all deposited, the volume of each is increased slightly, thus exposing a fresh portion of the stem of each cathode to the action of the current. At the end of an hour, if there is no deposit of copper on the bright portion of the cathode, the deposition may be considered complete. The cathodes are now carefully washed in three changes of water and two of alcohol, the last being quickly burned off in the flame of a spirit lamp, in order to dry them thoroughly. When they have cooled to the temperature of the room, they are weighed.

One more item of great importance is the battery. Chemists differ in opinion as to which is the best one to use. However, it is found that for regular service (from 3 to 5 nights out of the week) the Bunsen is by far the most satisfactory. It is a little more expensive and, perhaps, more troublesome than some others, yet it has advantages in the way of rapidity and economy of space which amply compensate for the extra expense and trouble. Two Bunsen cells will complete a set of 10 determinations in from 16 to 18 hours, where each sample does not contain more than 5 grms. of copper.

THE ONTARIO GOVERNMENT ASSAY OFFICE.—The statement of laboratory work done at the Ontario Government assay office, located at Belleville, which is conducted by the Bureau of Mines as an aid to discovery and development of mineral lands in Northern Ontario, shows a total receipt of 60 samples sent in for examination during the month of April. The laboratory made 91 determinations during the month for the public, consisting of 40 for gold, 14 silver, 12 copper, 3 nickel, 3 lead, 3 zinc, etc. Seven iron ores for partial or complete analysis as to smelting quality were received from Eastern Ontario. Four samples for identification or report as to probable commercial value were received and reported on at a nominal charge.

RUSSIAN OIL IN GERMANY.—The London "Petroleum Review" says: "We are informed that the firm of Nobel has lately entered into arrangements with Rothschilds for the joint distribution of their oil in Germany. From statistics given we have seen that whereas the import of American oil into the United Kingdom has considerably decreased, the import of the same oil into Germany shows an increase. The reason for this is that during the last few years the Americans have practically monopolized the German market, in spite of the competition which has existed. Now, however, that the German Government has shown a desire to break down this monopoly and has offered various facilities to Russian producers in the way of reduction of railway rates, etc., it may be expected that in the near future Russian oil trade will make considerable progress in Germany."

GOLD IN QUANTUNG, CHINA.—United States Commercial Agent R. T. Greener writes from Vladivostok that the reports that an engineer had discovered unusually rich gold mines in the Quantung Peninsula, and that Port Arthur itself stood on ground unusually rich in auriferous deposits are greatly exaggerated. The mining engineer, Bagdanovich, sent to Quantung by the Ministry of Government Land and Property, has prospected in that region, but the results are not as yet officially published. It is known here, however, that he proved the presence of gold in the sea beach, placer land, and in quartz veins. Mr. Greener thinks that "it is rather early to say anything definite, but there is no doubt that there is gold in the Quantung, for the administration has taken the precaution to establish a strict guard, and has prohibited mining until further orders are received from the Ministry of Agriculture and Government Property."

WORKING TWIN SEAMS OF COAL.—I.

Written for the Engineering and Mining Journal by W. S. Gresley.

"Twin" coal seams mean either (1) two geologically distinct or separate beds of coal, occurring so near together, that is, separated by a thickness of some other rock or stratum so thin that, for the purpose of working them, they may be regarded as a unit in the matter of underground openings or developments made or driven expressly for working them; or (2) two divisions, or "splits," as they are commonly called, of one and the same seam regarded as a definite geological horizon; that is, having one name or number in the series it belongs to.

That all workable twin seams of coal cannot be worked by the same system or method requires no explanation, but the methods by which they are opened and mined depend, of course, upon a variety of conditions, such as thickness, dip, depth, character of the coal, cost of working, and so on.

There are probably few coal-fields but contain, in one place or another, workable seams of this character, but it less often happens that the areas over which "twinning" of coal-beds occurs are very extensive, because, as all coal miners and mine managers know, the phenomenon of split seams applies only locally—the dividing rock of all coal-beds, or at least most coal-beds, is ever varying as to thickness, composition and horizon or position in relation to each split.

From such considerations as these it becomes evident that practically no two local physical and commercial conditions are similar, any more than any two geological ones probably are; and so it may be pretty safely taken for granted that if rules for working twin coals are to be found, they must be based upon the local conditions imposed in each particular case and from what information can be obtained from notes and data recorded concerning the more or less successful working of such seams where carried on.

Such records, unfortunately, are by no means plentiful, and usually, where found, are tantalizingly silent upon many points upon which

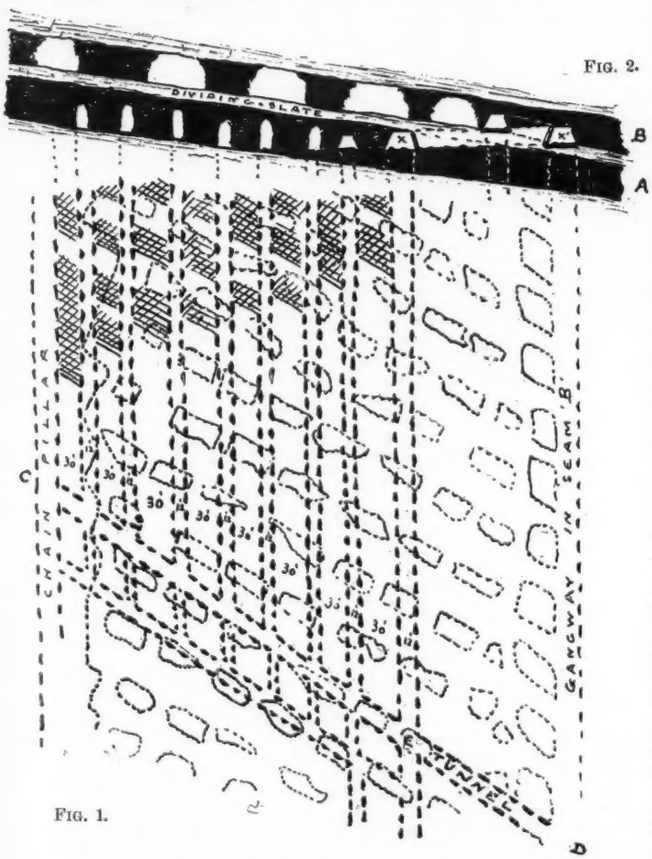


FIG. 1.

FIG. 2.

the student would need enlightenment. In order to facilitate such inquiry and to place on record a sort of summary or epitome of those published descriptions of twin-working methods that have come within the writer's reach (and to which he has added particulars of one or two cases noted in his memorandum books), it is thought that the compilation of the subjoined information may not be without interest. Moreover, if this article shall stir up other men having had practice in twin workings, or who are able to supplement some interesting matter in this connection, the aggregate knowledge thus brought out must, perforce, possess some value.

For convenience of treatment, let the subject be divided thus:

1. Room and Pillar.—(a) Flat, and moderate dips. (b) Steep dips.
2. Modified Long-wall.
3. Long-wall.—(a) Flat coal, and easy dips. (b) Steep seams.

1. Room and Pillar Methods.

Example No. 1.—This was in the Red Ash seam of anthracite lying nearly level (2½°) at a depth of about 275 ft. The bottom split was 6½ to 7 ft. thick, composed of 4 layers of good coal, 3 layers of bone and 2 of slate. Between this coal and the top split come about 4 to 6 ft. of strong fire-clay. The upper bench of coal consisted of 5 layers of coal, 2 of bone and 2 of slate; total height of the split about 7 ft. The plan of working was as follows: Rooms or chambers were worked in the bottom split first, the chambers being 25 ft. wide and the pillars left 18 ft. wide. Thus the roof of the chambers of the first working was the fire-clay. When these chambers were finished or driven in some 300 to 350 ft. from the gangway (the latter being driven in the lower split), the miners took out the track, and, for the most part, the posts, too. In some places the dividing rock—in this instance a fire-clay—would then fall of its own weight upon the floor and gob in the spaces beneath; but if not, it was shot down, and, working upon it, the top coal was then dislodged, the removal of the coal going on from the gangway inward, or in the same direction as the lower split was mined. Of course the longer the first-working chambers could be allowed to stand finished and open, the less of the dividing rock had to be taken down, or the cheaper the coal could be mined. The writer does not know whether any robbing of the pillars has been done, but the burial of those of the bottom split by the falled fire-clay plus the refuse made in the mining of the second split, would leave only the pillars of the top split get-at-able in case robbing followed. It should be remembered that the roof of this twin bed was a very sound one, and stood up well under the second working, whose floor being gob, was ill suited to posting off.

Example No. 2.—Here we have two thick beds of coal separated by from 3 to 5 ft. of strong slate (shale). I give the section: Rock, hard, 100 ft. more or less; slaty fire-clay, 10 ft.; coal, 5 ft.; slate, 6 in.; coal, 15 to 17 ft. (coal B); slate, strong, 3 to 5 ft.; coal and partings, 25 to 30 ft. (coal A); slate, 3 ft.; conglomerate.

Now in this colliery the seam, B, was worked before seam A. The dip of the coal is about 8°. Some 65 to 75 per cent. of the seam, B, was extracted on the breast and pillar plan, and the dimensions and location of the abandoned pillars and stumps were matters of much uncertainty, as detailed plans of these were not made.

The light dotted lines on plan, Fig. 1, are intended to show the pillars and gangway stumps abandoned in the seam, B. The thick dotted lines show the method adopted to work the seam, A, beneath the ruins in seam B. The "weight" of the cover over these seams is carried by the pillars left in B, consequently, when the seam, A, came to be worked, it was of the utmost importance that as little loss of coal should occur as possible, and the safest method adopted.

The plan shows that the breasts in bed B were worked on about one-half pitch, and this was done in order to facilitate the haulage of the mine cars to the faces of the working places, these being known as "wagon breasts."

The gangway in the upper seam being open or available for use for reaching the lower one, short tunnels were driven across the dividing slate at suitable intervals along the gangway to cut or tap the bed, A. One of these tunnels is shown at E, D, Fig. 1, and in Fig. 2, from X to XI.

These tunnels were driven forward from X, in the coal, through the lift to C, a distance of about 430 ft., and at every 42 ft. on this heading or narrow breast (which was 12 ft. wide), narrow headings, also 12 ft. wide, were driven to the right near the bottom rock. Thus the lift was opened up by a series of parallel 12-ft. places separated by 30-ft. pillars, the latter being cut through for ventilation where necessary. By keeping these headings as narrow as possible it became possible to take out, in a retreating manner, a large percentage of the pillars, and these are indicated on plan, Fig. 1, by cross-hatching. The work of robbing or "pillaring-back" was attended by no little amount of squeeze and disturbance of the pillars in bed A, due to the thrust upon them and upon the dividing slate and coal over the 12-ft. headings. The cracks so produced in the dividing slate afforded means for the escape or leakage of much of the air, so that to adequately ventilate this mine was no easy matter. Considering the great thickness of the seam, A, and the difficulties attending the work, it was estimated that about one-half of it was thus worked.

We may, with good reason, suppose that on the supposition that the quality of both these coal beds was satisfactory, and that the proximity of the lower one was known at the time when the upper one was worked, that much coal would have been saved and less working cost incurred, if both beds had been worked together, or practically at the same time, the workings in the upper one leading or slightly preceding those in the lower one.

Example No. 3.—In this case the dividing stratum is a strong shale (slate) and about 6 ft. in thickness. It separates twin coal beds, each split being about 7 ft. high. The floor is hard and the roof or top rock of the upper split is a slate. The breasts are worked one beneath the other, and are "wagon breasts," or rather the lower ones are wagon breasts and the upper ones "buggy breasts." The top split faces are kept a few yards in advance of those in the bottom split, and the coal from the top split is dumped through holes or nearly vertical chutes made in the dividing slate, about every 150 ft. apart, up the breast. By this arrangement the haulage of the coal of the top split is done in the breasts of the under one.

When the pillars are taken out, the work in the top split takes the lead; the dividing slate is carefully posted, as is also the roof in the top split pillar faces. To facilitate breaking the rock back of the pillar working, the back timbers are knocked out, and sooner or later the roof caves.

Example No. 4.—In Fig. 3 we see the top split, C, D, being mined after the bottom split. It is chamber and pillar method applied to a bottom split, A, B, 5 ft. thick, separated from the top split by 1½ ft. of slate and coal mixed, over which comes rock, 1 ft.; then comes the top split, C, D, 7½ ft. Chambers are worked, A to limit B, in the bottom coal, and then the top is shot down on the gob or refuse of the bottom coal, and the coal, D to C, is then worked off backward toward the gangway, as shown in the figure. It may be pointed out that in this mode of working, the accumulation of the refuse from out of the coal and the shot-down dividing rock (in this case about 2½ ft. of solid rubbish), lying some 5 ft. thick upon the floor of the worked-out chambers, makes

a pretty complete bar to ever working the pillars. The question naturally occurs, Why was this rock and debris not built into packs to help carry the roof while the pillars were mined out, and so save perhaps 90 per cent. of the coal lost or wasted in mining by the plan above described? Another way of putting the question would be, Would not the extra yield of coal from the pillars more than pay for the additional labor and timber involved in their extraction by utilizing the waste rock, etc., to support the roof?

Example No. 5.—When the roof of thick twin seams is very poor, and the coal is strong enough to make a fairly good roof, or contains a layer of slate that will make a good top, such layer or layers may be left up in the chambers, and either the full height of the coal to be mined taken out in one face—dividing slate and all—or the two divisions of the seam worked as per examples No. 1 or No. 4. When worked the full height, and advancing inward to the limit of the lift, the highest bench of coal is often mined in advance of the lower benches, in fact the whole working face is carried on in a series of rude steps, the sizes of which are regulated by the thickness of the different benches of coal and their interpolated layers of refuse.

Example No. 6.—The problem of economically working very thick twin beds of soft coal, each split being about 16½ ft. thick, divided by 4 or 5 ft. of shale, shaly coal and sandstone, inclined but a few degrees from the horizontal, presented itself in India about 12 years ago, and was attacked, and, in a measure, satisfactorily solved, in the following

FIG. 3.

manner: The seam, or rather seams, were much subject to spontaneous combustion, so in order to minimize attendant difficulties and risks in this connection, the coal was mined in panels or blocks separated by barriers of solid coal. The area of each panel was about 4 acres, this size having been found to give best results. Entries or main gangways were driven in the bottom bench of the seam. Out of these the 4-acre sections or panels were laid off to the rise, and the width of the barriers surrounding each panel was about 50 ft., the barrier being cross-cut only in two, or, at most, three places on the gangway, to serve for haulage, ventilation and drainage. Each panel was formed into pillars about 60 ft. square by driving 12-ft. places on the face of the coal and cross-headings, 6 ft. wide. This method of development was followed in both splits, one series of headings and cross-cuts being over the other, but the drivages in the upper split were kept 100 ft. or so in advance of those beneath. When the panel had been thus headed out in the lowest benches of coal or cut up into 60 by 60-ft. pillars, the next 3 ft. of coal, forming the roof of the 12-ft. and the 6-ft. headings, were taken down and loaded out. This process left the workings about 9 ft. high. The remaining 7 ft. or so of each split was left intact until the pillars were robbed. This last operation commenced in the innermost recesses of the top split heading, and when 2 or 3 of the pillars therein had been reduced as much as possible, then a similar attack was begun upon the pillars in the back end of the panel in the bottom split. The robbing was done by driving across the pillars and blowing down the upper layers of coal on the gob side, taking off slice after slice in as regular and systematic a manner as circumstances would allow. The actual yield of the pillar work greatly depended upon the speed of working, the ability to prevent or keep in check the gob-fires, the care in working, and the caving-in of the places in the bottom split from weight brought on by cutting away the overlying pillars. Posts 14 ft. long are used in the robbing, and as few places are kept open or worked at any one time as possible, so that fires may be prevented. It is said that in this way about 66 per cent. of the coal is mined.

The main object of working this twin seam in limited areas at a time was that if gob fires broke out and became unmanageable, the panel on fire could be hermetically sealed or walled off from the rest of the mine by building air-tight stoppings in the narrow and low headings connecting the panel with the main entry and air course driven parallel with it.

Example No. 7.—A thick seam of lignite or brown coal, some 30 ft. high, is divided horizontally into two by a shale seam a few feet thick, about 7 ft. from the floor. The method of mining was to drive gangways or headings about 18 ft. wide in the bottom split and under the dividing shale. The mine was laid out in blocks or panels of limited dimensions. When the first working—the headings and cross-headings—were driven up their allotted distance, the extraction of the pillars and of the top split was proceeded with. The pillars were first cut across by places 12 to 15 ft. in width, leaving a rib of coal on the gob, or inside. The top was well posted. Then the innermost corner of the panel was shot down upward in the top split to the roof, or to within a foot or two thereof if the roof over the coal was a rotten one. A big hole having thus been formed the full height of the two splits, the miners went to work and placed charges of dynamite in the dividing stratum over the posts, the firing of a group of which, by electricity, knocked out the props, and down came an immense mass of top-split coal. When this fall of coal had been cleared out of the way and the refuse cast back, the dynamiting process was repeated upon the next group of props, and so on, retreating toward the main entry, the protecting pillars of which were left intact till the very last.

Example No. 8.—The same twin bed of coal as in last example, only less thick, and with a thinner dividing band, with workings laid out as regards driving narrow places and forming pillars in the bottom split, as in that example. But, instead of shooting down the top coal it was taken down bench by bench by a kind of overhand stoping process, the men working on timber stages or on ladders. To protect the men and to avoid loss of coal and mixing of debris with it, two rows of posts—really poles—were always kept standing on the rise side and on the gob side of each pillar-working place. It is needless to remark that a good deal of coal could never be gotten; for what with squeezes, caves, and gob fires, the yield was probably seldom over 70 per cent. of all the coal in the bed.

Example No. 9.—In Fig. 5 are two coal beds dipping about 20°; the top split is about 5 ft. high, the lower bed about 15 ft. A bed of shale (mixed with coal), some 4 ft. thick, separates the two coals. The roof of the upper seam is of a yielding nature—a shaly fire-clay. The coals are bituminous and somewhat liable to spontaneous combustion. The conditions of the upper bed being favorable to long-wall working, that method is practiced. Room and pillar is the system applied to the thicker bed. The mine is worked by lifts. To open up the coal, a tunnel or cross-measures drift is driven from the shaft (see Fig. 5) and extended through the bottom coal to the top seam. In both seams, levels or gangways, L and L′, in the lower seam, and G and G′ in the upper one. (See plan, Fig. 4, and section, Fig. 5.) The lower seam is laid out in blocks or panels, each panel consisting of about 28 pillars, measuring, say, 70 ft. on the dip and 50 ft. on the strike. The rooms are driven about 12 ft. wide in the lower part of the seam, and on the level course, parallel with the gangway. The headings, H and H′, are driven up first, the rooms being set away (to the left side in this case, Fig. 4) when the headings have reached the upper limit of the lift, say about A, Fig. 4. A self-acting inclined plane is put in at head of head-

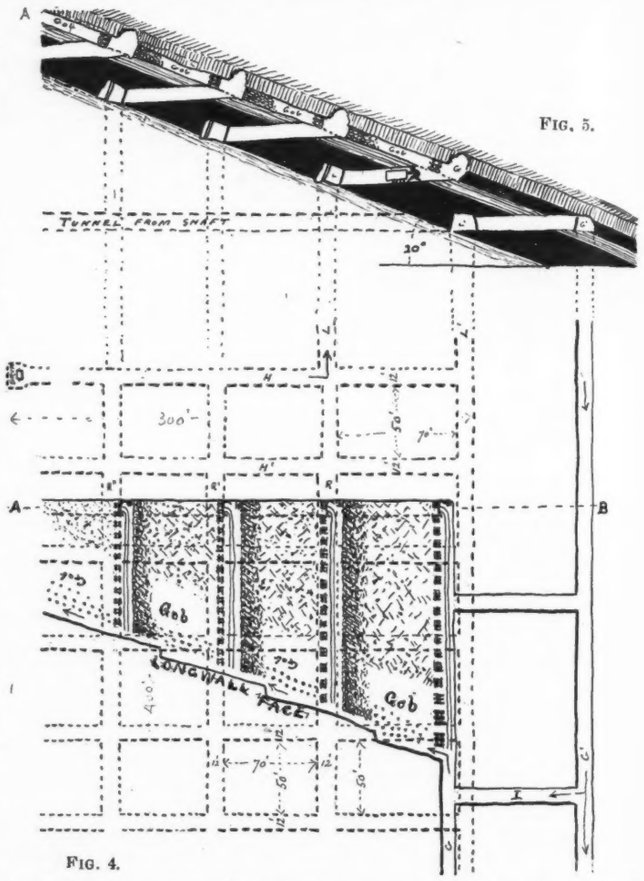


FIG. 4.

ing H, and the coal thereby lowered in pit cars from the different levels to the gangway, L.

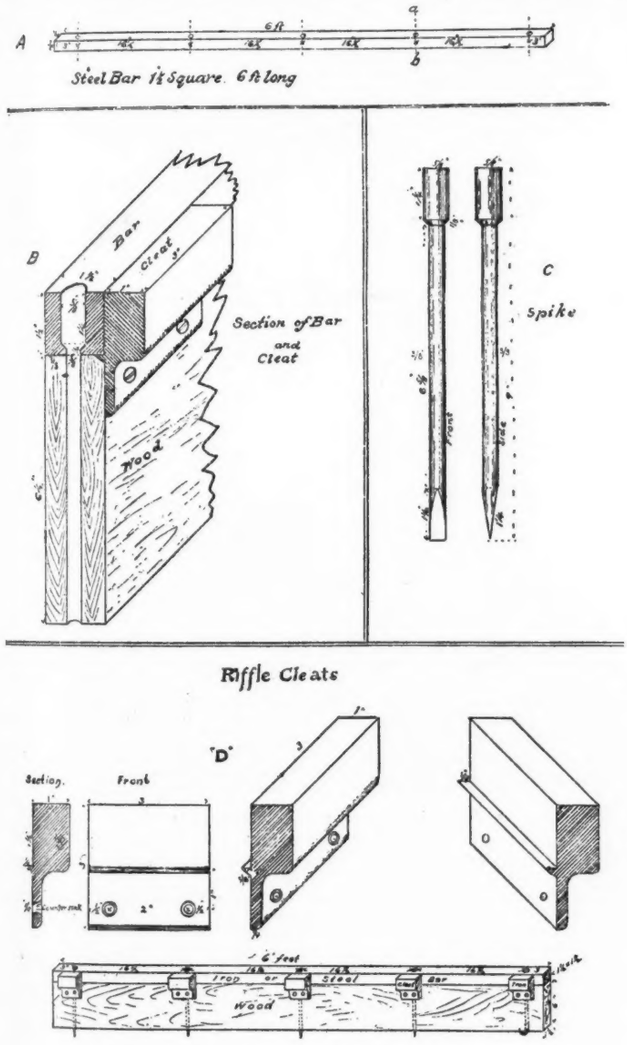
The top seam is opened by driving levels or slightly dipping cross-cuts from the bottom seam, as shown in section, Fig. 5. These cross-cuts are turned away at 66 ft. from the heading, H, one out of each room, and are driven at right angles to the rooms, R, R′, R″. When these cuts are through into the top seam, connections are made in that seam between each and on the section line, A, B, Fig. 4. The coal is then worked as one continuous long-wall face on level course, or in the same direction as the rooms beneath in the thick seam, the latter being kept somewhat in advance of the long-wall work. In these long-wall workings the top is carried by cribs or "chocks" built up from floor to roof along the rise side of the roadways. On the opposite side stout packs or buildings are carried along, say 12 ft. wide. The coal, as taken down, is slid or pushed along the floor to the wagon way or loading place in each stall or room. The plan, Fig. 4, shows the disposition of the props or posts along the working faces, and the fallen top over the gob or spaces between the roadways. The distance to which a range of these stalls is carried depends upon the location of each pair of headings, H H′, as driven up in the thick bed of coal. Thus, in actual practice, there may be several panels in operation in both seams at one time—one being developed—the second in full swing, and a third, say nearly exhausted. The section, Fig. 5, shows a car of coal being conveyed from the long-wall road through a cross-cut in the dividing slate to the outlet in the thick seam. By the time the long-wall faces reach their limit, which is when they have worked up to or as near to the gob ahead of them as circumstances admit, the roadways in the gob have, by reason of subsidence of the cover over the packs and the squeezing of the cribs, become almost entirely in the roof. While in

the bottom coal there is a considerable loss of coal caused by the inability to take out all the pillars, the top seam is very cleanly worked. The robbing of pillars in the thick seam is not done until the working is finished overhead in the thin seam. Should serious gob fires break out, the panel system of working allows of stoppings being built so as to isolate the affected area. The consumption of explosive used in mining these twin beds is about as 1 is to 3 in favor of the long-wall work. As to the ventilation of these workings, the fresh air enters by the tunnels, passes along the level, G', in the top split, then up through the heading marked I, through heading J to the lower corner of the long-wall faces, where it splits, the larger volume passing along the lower wagon road to the cross-cut connecting with the lower workings near R, and then ventilating those workings; while the lesser volume serves for the long-wall faces, and having done so, descends into the bottom workings to join the return air from them on its way to the outlet.

(To be Continued.)

HOBSON'S STEEL SLUICE RIFFLE.

The accompanying illustrations show the details of an improved steel sluice riffle devised by Mr. J. B. Hobson, and used in the Consolidated



HOBSON'S STEEL RIFFLE.

Cariboo Hydraulic Mines, at Bullion, British Columbia. The specifications for the work are as follows:

Riffle bars are made of steel 1½ in. square, cut in uniform lengths of 6 ft. each. The bars are to be square, of correct dimensions, perfectly straight, free from wind or twist and must be cut off square at ends. Each bar must be bored with 5 holes for ⅜-in. spikes, countersunk ¼ in. deep for ⅝-in. spike heads. Said holes to be spaced 3 in. apart from ends of bar, and 16½ in. apart, as shown on plans; said holes must conform to the dimensions shown in section of plan marked B.

Riffle cleats must be made from steel bars rolled in form and of dimensions shown on plan marked D and cut off in uniform lengths of 3 in. each. Each cleat shall be bored with 2 holes for ¼-in. screws and countersunk to admit heads, as shown on plans. All cleats must be made true and free from burrs, so as to fit close to bars.

Riffle spikes must be made of best quality ⅜ in. refined round iron, with heads carefully shaped to enter and fill countersunk holes. Each spike must be 9 in. in length from top of head to end of clinching point. Point must be forged down to chisel points for clinching, and made to conform as nearly as possible to dimensions shown on the plan marked C, the heads to enter and fill the holes in riffle bars.

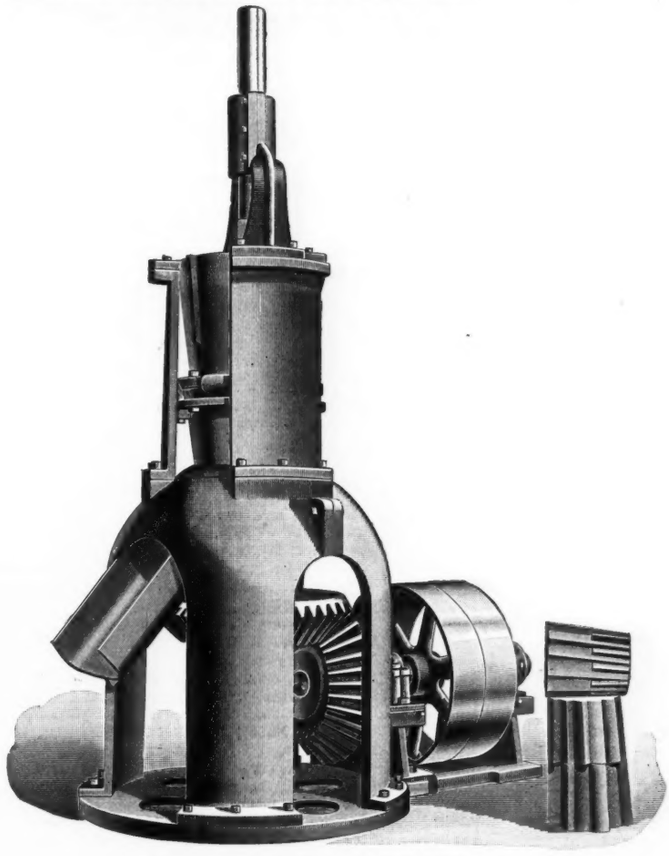
Steel riffle bars must be mounted on 1½ by 6½ in. surfaced pine bars, as shown on plan B, the steel cleats to be fastened with ¼-in. by 1½-in. wood screws, as shown on the plans.

The riffles are laid in the sluices longitudinally and wedged slightly from each side to keep them in position. One hundred feet in length of steel riffles are considered better as a means for recovering gold than 1,000 ft. of ordinary wooden sluice, or rick riffle.

THE GOUVERNEUR ROTARY ROCK CRUSHER.

The accompanying illustration shows a form of crusher which has been used very successfully for crushing talc, which is considered very hard to reduce on account of its fibrous nature. It is also used for other materials, and does excellent work. It is made by J. B. Johnson of Gouverneur, New York.

This crusher is intended to follow jaw crushers of the Blake type, reducing material to a much finer condition than is economically practical with the former. It has been demonstrated that breakers of the jaw type will rapidly and without overstrain crush down to, say, 2 in. in diameter, but to reduce finer greatly restricts their output. The Gouverneur rotary, taking material 2 in. in diameter, will reduce to ⅛ in. and finer at a speed of from 3 to 5 tons per hour.



THE GOUVERNEUR ROTARY ROCK CRUSHER.

That portion of the machine subject to wear is easily, cheaply and quickly removable, and made of material calculated to give good service. It is self-contained and has strength where strength is required.

The engraving shows the general construction of the machine. Some of the grinding cylinders are shown separately in the illustration.

POWER USED IN ELECTROLYTIC WORK.—According to Professor Borchers, the well-known electro-metallurgist, the world's manufacture of calcium carbide is utilizing a power equal to 180,000 H. P.; that of the alkalies and combinations of chorline, 56,000 H. P.; of aluminum, 27,000 H. P.; of copper, 11,000 H. P.; of carborundum, 2,600 H. P.

CARING FOR COAL-MINERS IN FRANCE.—The Saint-Etienne Colliery Company in France, says the London "Colliery Guardian," has lately put up washing and dressing rooms for the underground hands of the Treuil pit; and the arrangements were lately shown by M. Villiers, general manager of the colliery, and M. Petit, the chief engineer, to the Prefect of the Loire, who was accompanied by M. Tauzin, Ingenieur-en-Chef des Mines, director of the Saint-Etienne School of Mines. The well-lighted room contains 40 basins with douches, arranged on either side of a partition in the middle, while there are two small rooms for the officials. The water is heated by steam, and the men can pull up their clothes in baskets to the ceiling by means of cords and small drums.

ABSTRACTS OF OFFICIAL REPORTS.

Tharsis Sulphur and Copper Company, Spain.

This company, owning mines in Spain, has made a larger profit during 1899 than it ever made before during the 33 years of its existence. The actual net profits were £478,878, and a dividend of 37½ per cent. on the capital of £1,250,000 has been distributed. In the year 1876 a dividend at the rate of 40 per cent. was paid, but the capital was only £900,000 and the actual net profits £355,429. With this exception the prosperity of the year 1899 has been a long way beyond that of any other period of the existence of the company. The quantity of pyrites mined was 572,854 tons, and the total shipments of pyrites to England was 403,679 tons. The production of copper was 9.448 tons, as compared with 11,147 tons in 1898. This fall in the output of copper is partly due to scarcity of rain, but chiefly to the gradual decrease in the copper contents of the pyrites mined. The directors have for some time been aware that their deposits are being exhausted and have been continuously on the lookout for new properties in the same district. They have acquired an option on one property, and are conducting experimental works on it, but it is too early as yet to give an opinion as to its value.

Linares Lead Mining Company, Spain.

This company, which works the Linares and Quinientos mines in Spain, have made a larger profit during 1899 than in any previous year, although the mines have been worked continusously for 50 years. This is due chiefly to the higher price of lead, but it is also due to the fact that the output is much greater nowadays than during previous periods of high prices. The profits amounted in 1899 to £20,625, which will admit of a dividend being paid at the rate of 45 per cent. on the capital. In spite of the age of the mine the reserves keep about the same, being 3,000 and 4,000 tons at the two mines, respectively. The report just issued covers the latter half of the year 1899, and during the period the total ore raised at the two mines was 2,586 tons. The amount treated at the smelting works was 2,405 tons, the average contents being 77 per cent. of lead. The first fire produced 1,578 tons of first-class lead, or an extraction of 85 per cent, and the slags and fumes are estimated to contain 181 tons of lead. From the slag hearth were obtained 217 tons of second quality lead. The lead sold during the six months was as follows: 1,803 tons first class, realizing £25,595, and 233 tons second class, realizing £3,006.

The directors mention that they have acquired some additional lead mining properties in the Sierra Morena, but they are purchasing them for an independent company now in course of formation. The Linares Company will, however, undertake the smelting of the ores at their smelting works.

Mason & Barry, Limited, Portugal.

Like all other copper companies, Mason & Barry, Limited, owning the San Domingos mine in South Portugal, had a satisfactory year in 1899, though the ore treated for copper was only a very small fraction of the output. The total quantity of pyrites raised was 126,841 tons, as against 169,775 tons in 1898; and the shipment was 339,298 tons as against 285,441 tons in 1898. Of the ore shipped no less than 332,452 tons were sold for the sulphur contents alone. The total net profit for the year is given at £95,440, which, with the balance brought forward from last year, gives £100,886 as the amount available for distribution as dividend. This dividend is at the rate of 25 per cent. on the capital of £420,000.

The directors also announce that they intend to pursue the policy of reduction of capital which they have followed for several years, and there is £210,000 in cash available for this purpose at present. This amount has been provided since 1898, and it will serve to reduce the capital from £420,000 to £210,000 by paying back £1 for every £2 share. The proportion of money realized every year that is allotted to yearly profit and to the reduction of capital is calculated by reference to the exhaustion of the company's resources. Originally the company was formed in 1878 with a capital of £2,100,000, but in the year 1892 it was found that the deposit was limited, and so a reduction of capital by exactly one-half was agreed to. Since that date the reduction has gone on, but by means of returning capital in cash to the shareholders, instead of reconstruction as in 1892. The shares in 1892 were £5 par value, and in 1894, 1896 and 1898 £1 per share was returned in this way. The present return of £1 per share makes the shares of £1 par value and it may be surmised that the company will not have an existence much longer.

Ooregum Gold Mining Company, India.

The report for 1899 of this company has just been issued. In spite of a falling off during recent years in the grade of the ore this mine holds its place well among the leading gold producers in the Colar District, Mysore, India. It has suffered also during the past year from scarcity of labor due to the plague. The results for the year, however, are excellent, and the production of gold has considerably increased. From the commencement in 1888 until 1893 the total average returns of gold from stamps and tailings was over 2 oz. per ton. By 1896 this total had dropped to 1 oz. per ton, and in 1897 and 1898 the total was not more than 0.8 oz. At that time the future of the mine did not look particularly bright, and dividends were low. Since then the mine has been treated from a different point of view from the others in the same field and as large bodies of similar ore are in sight and the ore reserves increasing, there is no reason why it should not continue to be a profitable undertaking.

During 1899 the stamps treated 64,107 tons of rock, yielding 49,929 bullion ounces; 45,665 tons of tailings were treated by the pan process and yielded 6,542 bullion ounces, while the cyanide plant treated 30,352 tons of slimes from the tailings, yielding 4,824 bullion ounces. The total returns were 61,295 bullion ounces, which realized £229,028. The average yield per ton in the stamp mill was 15 dwts. 13 gr., an increase of 2 dwts. 9 gr. over that of 1898. The cyanide plant only came into operation in July, but already the results have been so encouraging that additional plant has been laid down and the capacity will thus be increased from 6,000 to 9,000 tons per month. The reserves of quartz have been increased during the year by 13,622 tons and now stand at about 109,000 tons. The tailings reserve has increased by 15,000 tons and there is an accumulation of no less than 252,000 tons of tailings slimes waiting to be treated by the cyanide process.

The exploration and development work has been prosecuted steadily during the year and the results have been very promising. It is a matter of regret that Mr. W. J. Hambley, the mining superintendent, died a few weeks ago. He had been in the service of the company since its commencement.

The gross receipts from gold during the year were £229,028, and the net profit £77,477. Out of this £29,000 is being paid as dividend on £145,000 ordinary shares, being at the rate of 20 per cent., and £36,000 on the £120,000 preference shares, being at the rate of 30 per cent.

War Eagle Mining Company, British Columbia.

According to the report of Edmund B. Kerby, manager of this company, almost the entire ore production has been from the main vein and from a single ore shoot. The main vein has been exposed to a depth of 755 ft. The vein carries pay ore in irregular patches interspersed with barren rock or very low grade. The different ore bodies vary from $40 down to $13.20. At 640 ft. east of the shaft the main vein is crossed by a smaller vein. The ore is said to be of a good grade,

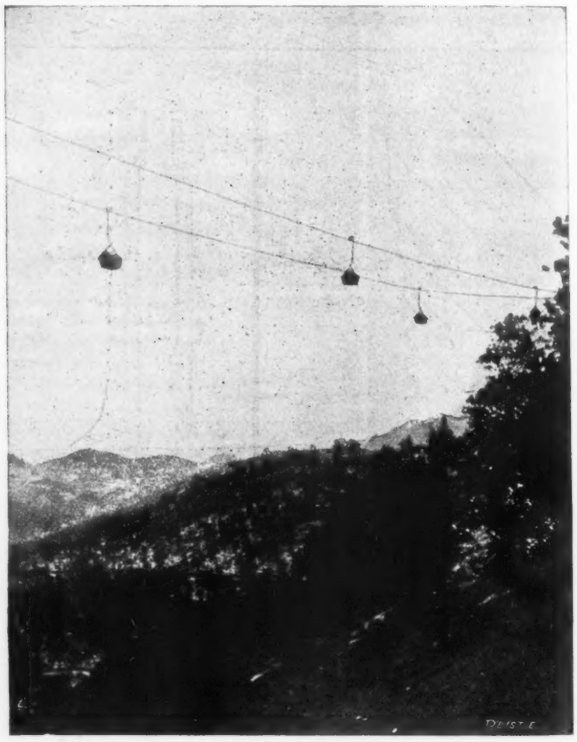


FIG. 2.—THE MONTGOMERY WIRE ROPE TRAMWAY

and has already yielded 5,966 tons averaging $23.38 smelters' gross value. A winze has been sunk 60 ft. on this vein without reaching the limits. The fifth level is but partially worked, and promises something in the way of business. Forty feet east of the shaft the main vein splits into north and south branches and both carry pay ore.

The sixth level also shows north and south branches, and both carry pay ore. Between the levels the largest and richest ore mass is found along the line of conjunction of the two branches, and both carry pay ore. The shoot on the sixth level is only partially developed, the quantity being yet undetermined and as yet nothing shows any decrease in size with depth. The main shaft has now reached the seventh level at a depth of 3,880 ft., measured on the vein, and cross-cutting on the vein at this depth can soon commence.

The report further states that the ore has decreased in grade with depth, but the most of mining and smelting has also decreased, and the stopes in consequence has been extended to include ore of a lower grade. The fourth level in comparison with the first three levels has shown a great and sudden decrease in both the quantity and grade of the ore. The fifth level is stated to be an improvement on the fourth, and the sixth promises to be more productive than the fifth. It is added that no conclusions can be drawn until the shoots are developed to a greater depth, and the fact that development work is exhausted makes it impossible to present any accurate estimate of ore available above the sixth level. So far it has been estimated that there is above the sixth level about 20,000 tons, averaging about $14.25 per ton gross smelters' value.

It is stated by the management that the most promising ground is on the 5th and 6th levels, from which 17,091 and 8,000 tons of ore have been taken, the gross smelter value ranging from $10.45 up to $50.

Mr. Kerby says in explanation of the partial suspension of operations that the unfortunate machinery troubles of the past year will soon be terminated by the installation of a new plant.

On resuming production, he advises that dividends be deferred until a suitable reserve is accumulated in the treasury. This is necessary to tide over the emergencies to which mining is always subject, such as accidents, temporary changes in the ore shoots, etc. The rate of production which the War Eagle can maintain, Mr. Kerby says, has a natural limit which is fixed at 50,000 tons yearly, and he advises this rate of production.

THE MONTGOMERY WIRE-ROPE TRAMWAY.

The accompanying illustrations show one of the aerial wire-rope tramways built by the J. H. Montgomery Machinery Company of Denver, Colo. Fig. 1 is a view of the tower or support, and Fig. 2 is a general view of a tramway. The company's ropeway is of the single-rope system, but has some special and valuable features. One of these is that when the bucket arrives at the loading station the grips are automatically loosened from the cable, allowing the cable to travel all the time, while the bucket stops immediately under the ore-chute, where it can be filled by the person in charge. When the next empty bucket arrives at the loading station it automatically releases the bucket just loaded, which moves off down the line, while the bucket which has just arrived at the loading station stops under the chute to be loaded as before. This obviates the necessity of a mechanical loader traveling with the bucket. Any one who has ever used a single-rope system will understand the great advantage of having the buckets stop to be loaded, as the ore is not scattered all over the station, and much complicated machinery, which must be kept in repair, is dispensed with.

FIG. 1.—THE MONTGOMERY WIRE ROPE TRAMWAY.

Where the buckets are attached permanently to the rope, the constant bending of the rope at the clip causes the cable to break at this point, while with the Montgomery clip the buckets are gripped fast to the cable always in a new place, making the life of the rope over twice as long as with old-style single-rope tramways. Another point is the fact that the grips never get loose and skate the cable. The Montgomery grip is operated by the weight of the bucket, and therefore the more load you put on the bucket the tighter it sets the grip, and the less load the less it sets the grip; but it is so mechanically arranged that the weight of the carrier always sets the grip so tight that it is not possible for it to slip on the cable.

At the lower or dumping terminal the buckets are dumped automatically, simply by raising the latch with the trigger, which permits the buckets to turn bottom upwards. In stormy weather the buckets can be sent back to the mine turned upside down, and is therefore not filled with rain or snow; and in freezing weather the ore is not frozen in the buckets.

The company also makes a new automatic braking device, where the lines run by gravity. This brake works and controls the tramway as well as the governor would control the speed of an engine, and very much better than it is possible to do so by hand. On reasonably short lines, where there is not too large a tonnage, one man can operate the tramway on each shift, and can easily tram down 150 tons per day. Under favorable circumstances ore can be trammed down at an expense of not more than 4c. per ton per mile, as everything about the machinery works automatically, excepting the raising of the gate at the ore-chute to fill the bucket.

One of the main points of a successful tramway is in the construction of the towers or supports for the line. To this point the company has given special attention, and its towers are very carefully designed to meet the hardest requirements.

IMPORTS OF COAL IN CHILE.—Messrs. Jackson Brothers, of Valparaiso, report the imports of coal into Chile for the full year as follows, in metric tons:

	1898.			1899.		
	Steam coal.	Smelting.	Totals.	Steam coal.	Smelting.	Totals.
England	243,248	8,599	251,847	284,000	24,073	308,073
Australia	270,085	42,763	312,848	307,119	43,277	350,396
United States	10,608	.....	10,608	3,200	.....	3,200
Totals	523,941	51,362	585,303	594,319	67,350	661,669

The increase last year was 76,366 tons, and was in both English and Australian coal.

NEW SOUTH WALES CONTRACTS FOR STEEL RAILS.—The "Telegraph," of Sydney, New South Wales, on February 19th said of the new contracts for steel rails called for by the Colony, that in response to the invitation of the Works Department, tenders were received from English and American firms for 19,000 tons of steel rails, fish plates, bolts and nuts. Two offers were obtained from the United States and several from Great Britain. After allowing for shipping charges, etc., the lowest tenderer was the Illinois Steel Company at £151,417 ($736,873); the next was the Barrow Company, of Great Britain, at £152,727 ($743,245), also allowing for shipping charges. In connection with the Illinois Company, however, there were certain stipulations about exchange which would mean an extra expense, and a condition that the Government of New South Wales should have a banker's credit, which would mean paying a commission to some American firm. These conditions would bring the tender of the Illinois Company to somewhere about that of the lowest English tenderer. The members of the tender board agreed with the minister in giving the contract to the Barrow Company, of Great Britain, and the under-secretary in his minute on the matter states: "I am quite sure that when the exchange and expenses were paid in connection with the Illinois Company's tender, it would cost more than the Barrow Company's offer."

GERMAN COAL MINES.—The annual meeting of the Association of Coal and Iron Miners, representing some 33,000 operatives, was recently held at Altenburg in Saxony. The association renewed the demand for the adoption of an Imperial law for fixing the legal status of mine workers, including the eight-hour work day; and it protested energetically against the prohibition of the importation of meats, as contemplated in the bill that recently passed its second reading in the Reichstag. An attempt has been made to have the association merge itself into the Social Democratic party; but it was wisely decided at Altenburg to maintain the independent existence of the association. The association formulated its wishes in regard to new labor legislation by asking for a reform of the arbitration courts for labor matters, by giving these courts power to compel the acceptance of their decisions, in place of the mere advisory functions now possessed by them; also the bestowal of corporation rights upon trade unions. The association further formulated its policy in regard to strikes, in the direction of giving the executive committee complete control over the subordinate organizations in forbidding strikes. It was decided that no pecuniary assistance should be given to strikers without orders.

MINERAL COLLECTORS' AND PROSPECTORS' COLUMN.

(We shall be pleased to receive specimens of ores and minerals, and to describe and classify them, as far as possible. We shall be pleased to receive descriptions of minerals and correspondence relating to them. Photographs of unusual specimens, crystals, nuggets and the like will be reproduced whenever possible. Specimens should be of moderate size and should be sent prepaid; we cannot undertake to return them. If analyses are wanted we will turn specimens over to a competent assayer, should our correspondent instruct us to do so and send the necessary money.—Editor E. & M. J.)

127.—Golden Calcite.—The beds of the Fort Pierre Shale in the Bad Lands of South Dakota contain many concretions which, when broken open, show internal cavities studded with crystals of calcite of a more or less golden yellow color. A large number of these crystals were collected by an expedition organized by the Field Columbian Museum in 1898. According to Dr. Farrington these crystals are all simple rhombohedrons, but the form shows much distortion. Although some of the crystals show a normal development of the rhombohedron, the greater number are lengthened out along an axis normal to one of the rhombohedral planes. The appearance is therefore that of a monoclinic crystal made up of a prism and basal planes. This apparent prismatic form is made more striking from the fact that the crystal usually rises more or less perpendicularly from its plane of attachment. The apparent basal plane is usually more or less curved, and has a somewhat pearly luster. The prismatic planes are often curved as well. The length of the apparent prisms varies from a few millimeters to about 2 centimeters. The color of the crystals varies from a pale yellow to a deep orange. Some are perfectly transparent, but the majority are translucent to opaque. The yellow color is probably due to the presence of iron, as on heating the crystals turn black and become slightly magnetic.

128.—Wolframite Ore.—A sample of wolframite ore from claims belonging to W. McLaughlin and others of Hill City, situated on Yellow Creek, Pennington County, South Dakota, was sent recently to the Director of the Mint. Analysis showed the specimen to contain 40.15 per cent. of tungstic acid, 7.80 ounces of gold and 2.65 ounces silver per ton.

129.—G. H. F.—Zinc Ore.—We fear that the well driller who told you the sample of ore you send came from a well driven in Eastern Ohio, was much mistaken. In the first place, it is altogether improbable that such a fragment would be brought up by churn drilling (it is not from a diamond drill core), and in the second place, the specimen evidently came from Franklin, N. J. It is typical of the unique ore mined there. The black mineral is franklinite, iron-zinc-manganese oxide, the green mineral is willemite, zinc silicate, and the red mineral is zincite, zinc oxide.

130.—I. D. K.—Your specimens are mostly surface rock, and some show so much decay that it is impossible without detailed study to say what were the original minerals. The specimens submitted are also too small for ready determination. No. 1 is apparently vein formation, mostly quartz. The red color is from iron oxide. No mercury is present, neither is silver or gold, unless in minute quantities. No. 2 is a calcaceous breccia or conglomerate. Most of the subangular inclusions are quartz; the matrix is mostly calcite. No. 3 a dark igneous rock containing much quartz, possibly a quartz-diorite porphyry. No. 4 is too small for determination, a fine-grained brownish rock containing much silica. No. 5 is much oxidized, contains quartz and traces of calcite, with some iron oxide; may carry lead carbonate. No. 6 is a melaphyr, a trap rock. The light-colored mineral is apparently a zeolite. No. 7 may be a much weathered eruptive rock. It is now mostly kaolin. No. 8 is another much weathered rock; may have been a breccia or an agglomerate.

QUESTIONS AND ANSWERS.

(Queries should relate to matters within our special province, such as mining, metallurgy, chemistry, geology, etc.; preference will be given to topics which seem to be of interest to others besides the inquirer. We cannot give professional advice, which should be obtained from a consulting expert. Nor can we give advice about mining companies or mining stock. Brief replies to questions will be welcomed from correspondents. While names will not be published, all inquirers must send their names and addresses. Preference will, of course, always be given to questions submitted by subscribers.—Editor E. & M. J.)

Rutile.—I have a small quantity of pure rutile and a much larger quantity mixed with rock. Is there any sale for it? What is the price and the market?—V. V.

Answer.—The demand for rutile is very small, and the only manufacturers using it, we believe, are the S. S. White Dental Company of Philadelphia. The demand is so small that it is impossible to give quotations.

Asbestos.—Can you give me demand for and price of asbestos? In what condition is it put on the market? Who are the chief consumers?—A. H. M.

The demand for asbestos in this country at present is chiefly supplied from Canada. We import asbestos to the value of about $325,000 yearly. The price varies widely according to quality. The value at the mine averages about $20 a ton. In the Canadian mines, asbestos is generally treated in crushers of a peculiar type—the "Cyclone" pattern is most favored—to free it from adhering rock, and is hand sorted according to length of fiber.

The H. W. Johns Company of New York is the chief consumer in this country. The only producer in the United States at present is the Sall Mountain Asbestos Company of Georgia.

Consult "The Mineral Industry," Volumes V, VI and VII.

Tin-Plate.—Was not the result of the tariff on tin-plate a reduction in the price of English plate in the American market? Is not the present capacity of American tin-plate mills almost, if not quite, equal to the demand in this country?—J. R. D.

Answer.—The tariff on tin-plate caused a reduction in the price of plates in England (for export), but not in this country. The English makers made the best terms they could to hold all the trade possible. The price in the United States was raised, not lowered.

The American mills have a capacity very nearly large enough to supply the market at present. Should the American Tin-plate Company see fit to do so, it could probably put down prices and furnish tin-plates enough to shut out British plates altogether.

Molybdenite.—There have been so many conflicting values placed upon molybdenite that I wish to find out something definite and accurate, therefore ask the following question: What is the present price per ton of molybdenite which is 95 to 100 per cent. pure, producing from 50 to 60 per cent. molybdenum? What is the best method of separating molybdenite from quartz? In your opinion would a mine containing 50 to 100 tons of this metal be valuable?—H. A. W.

Answer.—Molybdenite ore, if it runs not less than 56 per cent. molybdenum, and is free from copper and other injurious impurities, brings at the present time about $200 per long ton. We are informed that there is a surplus of ore offered, and the demand is not large.

Molybdenite could probably be separated with little difficulty from quartz or other gangue by crushing and concentration.

We could not give any opinion as to the value of a mine without a full examination.

Barytes.—Can you give some information as to what market there is for barytes or barium sulphate? What manufacturers use the ore? What are the present prices ruling?—D. G.

Answer.—The consumption of barytes in the United States is now about 30,000 tons yearly. A small quantity is used in making fireworks and a small quantity as a reagent in certain chemical processes. The great bulk of the barytes sold is used as a paint. It is mixed with white lead and zinc white, and is usually considered as an adulteration, though for some purposes it is an improvement. For instance, the mixture of barytes with white lead prevents discoloration where the paint is exposed to smoke, acid fumes, sea water, etc. The paint manufacturers would be the chief buyers.

The price of crude barytes in New York is, at the present time, $7.75 to $9 per ton of 2,000 lbs., according to quality. Floated—that is, ground and purified—barytes ranges from $14.50 to $17.50 per ton.

Zinc Discs for the Cyanide Process.—Can you tell me the shape and size of the zinc disks used in the cyanide process?—E. P.

Answer.—Brosqui—"Notes on the Cyanide Process"—says: "The method generally employed of preparing zinc shavings is to cut them from a solid cylinder of zinc disks, mounted on the mandril of a lathe. The disks, 12 in. in diameter, are punched in the center with a 1-in. hole, through which the iron mandril runs, the series of disks being held together by means of a system of iron plates and nuts. The shavings are cut by hand by means of a chisel supported on a rest. This system is objectionable on account of the excess of the cost of labor over other methods. The shavings may be cut automatically with a minimum of attention on a machine lathe, a method employed at Mercur, Bodie and elsewhere.

"At the Standard Works in Bodie, the zinc is cut on a compound-geared machine lathe, in the machine shop connected with the stamp-mill. The lathe is provided with a wooden mandril 3 ft. long and 9 in. diameter. Around this mandril are tightly wound five sheets of commercial zinc, No. 9 gauge, 3 ft. wide and 7 ft. long, the edge of each sheet being soldered to the layer underneath. The side-cutting tool of steel is fixed to the carriage and adjusted to the edge of the core of zinc sheets. The mandril is geared to 84 revolutions per minute, or 242 revolutions to one of the carriage-screw. Thus, in 15 minutes the carriage moves 1 in. and the mandril makes 1,260 revolutions. The shavings cut are 1/1260 in. in thickness and about 1/32 in. wide. Five sheets of zinc of dimensions given above weigh about 65 lbs.; hence, to cut this amount into shavings requires about 9 hours. Such a lathe, working automatically 4½ hours per day, will cut enough shavings to supply a 75-ton plant, operating under average conditions. As the zinc shavings run off from the lathe they are caught between a series of small

iron rolls, operated from the mandril, by which they are guided into a box under the lathe provided for the purpose. If the shavings are allowed to wind around the mandril, they must periodically be pulled off in bunches, which have to be disentangled before the material can be used for precipitation. Before the system of rolls was devised a man was kept busy several hours a day preparing the shavings. An assistant in the machine shop winds the sheets on the mandril and keeps the cutting tool sharpened; but apart from this the lathe requires very little attention. Shavings cut to the dimensions given will expose per pound about 1,630 square feet of surface. A sheet of zinc exposing 42½ square feet of surface will expose, when cut up into shavings, over 400 times as much."

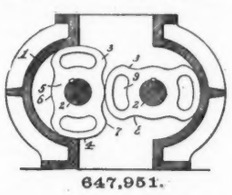
PATENTS RELATING TO MINING AND METALLURGY.

UNITED STATES.

The following is a list of the patents relating to mining and metallurgy and kindred subjects, issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

Week Ending April 24th, 1900.

647,951. ROTARY PUMP. Ralph C. Enyart, Connersville, Ind., assignor to the P. H. & F. M. Roots Company, same place. The combination of a pair of parallel shafts, a casing having concave inwalls concentric with said shafts, two similar impellers fast one on each shaft, each of said impellers having oppositely-disposed lobe-sections



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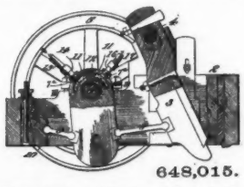
bounded by arcs concentric with its shaft and a waist-section also concentric with its shaft and of a diameter substantially equal to the greatest transverse width of the lobes, the extremities of the waist-arcs being joined to the adjacent extremities of the lobe-arcs by a concave-convex curve which blends at its extremities with said arcs, the concave portion of which curve extends with a constantly increasing radius from a point on the pitch-circle of the impeller 45° from the radii passing through the centers of the lobe and waist arcs to the point of blend with the waist-arc, and the convex portion of which curve extends with a constantly increasing radius from said point on the pitch-circle to the point of blend with the lobe-arc.

647,960. ELECTROLYTIC CELL. George W. Gesner, New York, N. Y., assignor to Harleston Corbeit Gesner, same place. A cell comprising a part or portion of an alloy of iron and hydrogen, the hydrogen being present in such proportions as to prevent the oxidation (induced for instance by chlorine) of the iron in the said alloy.

647,969. PROCESS OF EXTRACTING ZINC FROM SUBSTANCES CONTAINING SAME. Thomas Ryan, Jr., Flint, and Newton Hughes, Bagilt, England, assignors to the United Alkali Company, Limited, Liverpool, England. The process consists in subjecting the raw material to the action of a solution of a caustic alkali, precipitating any lead present by galvanic action, securing the removal of organic matters and iron, manganese and silicon by the addition of caustic lime and bleaching powder, and finally precipitating the dissolved zinc in the form of zinc oxide or zinc hydroxide by decaustifying the solution by the addition of an acid.

648,015. VIBRATING PITMAN FOR CRUSHERS. George W. Wright, Webb City, Mo. A vibrating pitman for reciprocating the active jaw of a crusher, comprising an opening in the upper end of the pitman, adapted to receive the eccentric part of an eccentric shaft, the semi-circular water-chamber, located within the upper end of the



648,015.

pitman, extending from side to side of the pitman and straddling the opening and separated therefrom, the inlet and outlet radial pipe-sockets located at the top of the pitman and on opposite sides of the water-chamber and the inlet and outlet pipes connected with their respective pipe-sockets; the inlet-pipe directing the flow of cold water from above downwardly onto the inner wall of the chamber from whence it is spread over the surface of the inner wall toward the outlet side of the chamber and passes upwardly out and through the outlet-pipe.

648,042. FUEL COMPOSITION. Alberto D. de Micheroux, Marseilles, France. A composition of matter for fuel consisting of coal-dust, cerotic acid, protoxide of iron, carbonate of magnesia, and liquid alkali.

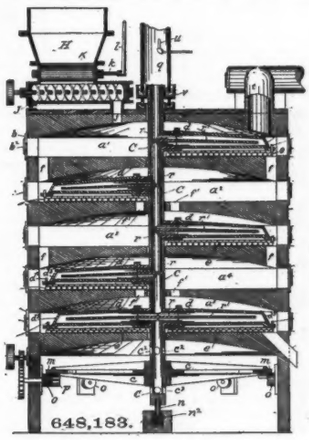
648,058. PROCESS OF HARDENING STEEL. Ludwig Schiecke, Magdeburg, Germany, assignor to Theodor Wallfisch, same place, and Gustav Behr, Cologne, Germany. The method consists in coating the steel with a mass adapted to protect it against direct contact with the fire, strewing cyanide of potassium upon that coating, heating the whole, and quenching it after the heating.

648,091. APPARATUS FOR CASTING INGOTS IN CONTINUOUS LONG LENGTHS. Johan O. E. Trotz, Worcester, Mass. A central mold, comprising a thin metal tube whose interior is worked and polished to a straight and uniformly smooth surface, and having means for conducting the molten metal thereto, said tube being secured at its upper end; in combination with the outer case or jacket, of larger diameter than the central tube, arranged over said tube to form an annular chamber surrounding the tube; hollow heads arranged at each end of said central tube and its jacket, and of larger diameter than said jacket to form annular chambers around the ends thereof, the inside of the outer ends of said hollow heads being arranged to come a short distance from the ends of the central tube to form an annular opening between the two, and suitable inlet and discharge pipes.

648,096. DRILL-JAR. Geo. K. Benner and Ulysses G. Hubley, Pittsburg, Pa., assignors to the Oil Well Supply Company, same place. A drill-jar having the crotch formed by the union of the reins with the head, limited within the reins.

648,119. PROCESS OF MANUFACTURING RICH FERROCHROMIUM. Emile Vielhomme, Froges, France. The process consists in subjecting chromite to the heat of an electric furnace in the presence of a suitable flux and a quantity of pulverized coke, the temperature being sufficient for the reduction and fusion of the ore and for the volatilization of most of the iron, the remaining iron being alloyed with the chrominum only in the proportion necessary to constitute a rich chrome iron.

648,183. ROASTING FURNACE. Utley Wedge, Bayonne, N. J. The combination with the roasting-chamber of a central shaft extending



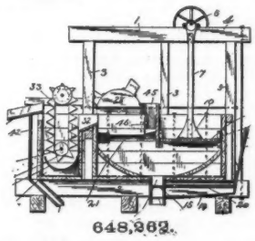
648,183.

vertically through the roasting-chamber and having in said chamber arms provided with stirring-blades, a rim secured to said shaft beneath said chamber, wheels or rollers supporting said rim, and means for continuously rotating said shaft.

648,214. METHOD OF CASTING ALUMINUM ALLOYS. William A. McAdams, New York, N. Y. The method of casting alloys containing aluminum and magnesium and in which the aluminum predominates consisting in rapidly removing the heat from the molten mass at a rate corresponding to not less than one-fifth of a calory per second, from a solid spherical casting 1½ in. in diameter; more rapidly than has hitherto been common in the ordinary use of molds, thereby preventing the segregation of the metals and the formation of large crystals.

648,222. EXPLOSIVE. Herman E. Sturcke, New York, N. Y., assignor by mesne assignments to the Alba Chemical Company, same place. An explosive consisting of an explosive organic nitro compound, an oxygen-consuming material, ammonium nitrate, and an additional oxidizing material, the oxidizing materials being combined in the proportions by weight, substantially as set forth, whereby the ammonium nitrate will furnish from 5 to 20 per cent. of the available oxygen.

648,262. COAL SEPARATOR. William Honecker, Mahanoy City, Pa. A water-reservoir composed of wooden staves held edge to edge by clamping-bolts passing through them, in combination with a



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plunger having a head provided with adjustable wear-plates at the corners thereof, angular metal plates secured at the corners of the reservoir, a slush-box in the bottom of said reservoir, and a double gate for said box.

648,322. PROCESS OF MAKING NITRIC ACID. John F. White, Buffalo, N. Y. The method of converting weak nitric acid into strong nitric acid in the process of manufacturing nitric acid from sodium nitrate and sulphuric acid, consists in adding the weak nitric acid to the charge of sodium nitrate and sulphuric acid and distilling the charge.

648,348. METHOD OF TREATING CARBIDE OF CALCIUM. Chas. E. Yvonneau, Paris, France. In the process of preparing carbide of calcium, saturating the carbide, preparatory to the crushing operation, with a substance indecomposable by the carbide, to prevent decomposition during the crushing operation, and then crushing it while so protected from decomposition.

648,349. PROCESS OF PREPARING CALCIUM CARBIDE. Chas. E. Yvonneau, Paris, France. As an improvement in the process of preparing calcium carbide, crushing the carbide and then heating such crushed carbide as and for the purpose described, and then combining the heated carbide with a hot liquid agglomerative mixture indecomposable by the carbide and molding the resultant plastic mass into bodies of suitable shape.

648,350. PREPARED CALCIUM CARBIDE. Charles E. Yvonneau, Paris, France. A gas-producing body composed of carbide of calcium crushed after having been saturated with a substance indecomposable by the carbide, combined with a hot liquid agglomerative mixture substantially soluble in water but indecomposable by the carbide, and constituting a plastic mass from which the gas-producing body is molded, and having its exposed surface coated with a protecting medium slowly soluble in water.

648,354. PROCESS OF EXTRACTING METALS FROM THEIR ORES. Caleb G. Collins, Woodsburg, N. Y., assignor to Calvin Amory Stevens, New York, N. Y. The process consists in dissolving out or extracting metal from the powdered ore by means of a solution of ammonium salt in the presence of an alkaline base capable of decomposing the ammonium salt.

PERSONAL.

Mr. John Hays Hammond is in Colorado.

Mr. H. C. Perkins, consulting engineer of New York, is in Japan.

Mr. R. W. Correll of Salt Lake, Utah, has been inspecting mining properties in Inyo County, Cal.

Mr. Alexander Agassiz, of Boston, has been visiting the Calumet & Hecla Mine in Upper Michigan.

Mr. Hamilton Smith, consulting engineer, is expected to arrive in New York from London on May 16th.

Mr. W. S. Haskins, superintendent of the East Le Roi Mine, has returned from San Francisco to Rossland, B. C.

Mr. J. W. Dixon, of Philadelphia, at the head of the Little Joe Mine, has gone to Leadville, Colo., to arrange for active work.

Mr. B. F. Horn, head mining engineer of the Cougnamata copper mines of Chile, is visiting the copper mines of Upper Michigan.

Mr. Chas. Boettcher, a prominent Leadville, Colo., mining man, has left for Paris and other foreign cities, to be absent a year.

Mr. N. F. Leopold, general manager of the Arcadian copper mine, near Houghton, Mich., has arrived at that mine from Chicago.

Mr. E. L. Fletcher, assayer and chemist, formerly working the cyanide plant in Owens Valley, has located at Ballarat, Inyo County, Cal.

Mr. C. Wade Stickney, mining engineer and metallurgist, lately in Arizona on professional business, is in New York, at the Imperial Hotel.

Mr. J. H. Weddle, manager of the Arkansas Valley and Union smelters at Leadville, Colo., spent last week in the East on business matters.

Mr. T. E. Livermore, vice-president of the Calumet & Hecla Mining Company, has been inspecting that company's property in Upper Michigan.

Mr. H. W. Hardinge, mining engineer of Denver, is examining mining properties in the Gold Belt of the Gunnison country in Colorado, for New York men.

Mr. Leslie Hill, of Vancouver, consulting mining engineer of the Jewel Mine, Greenwood, B. C., was recently in Rossland, investigating conditions there.

Mr. F. C. Miller, for 20 years a resident of Leadville, Colo., has left for Cape Nome with his gold washing machine, which he intends to operate personally.

Mr. H. W. Fletcher and Mr. M. Hesselman, formerly of the Iron Chief Mine, Riverside County, Cal., have sailed from San Francisco on the steamer "Portland" for Nome City.

Mr. Franklin Ballou, manager of the Bimetallic Smelter at Leadville, Colo., has returned to Colorado, after spending some weeks with his family in New York City and Philadelphia.

Mr. C. T. Mixer has resigned his position as superintendent for the Chicago-Lehigh Company at Joplin, Mo., and accepted a similar position with the Missouri Zinc Fields Company.

Mr. James Bowron, of the Tennessee Coal, Iron & Railroad Company, is in Italy. His return will be longer delayed than was at first thought, as he intends to visit several countries.

Mr. J. W. Bennie, superintendent of smelters of the Mountain Copper Company, Limited, has returned to California from an extended trip to Europe, where he has examined large smelting plants and studied the latest improvements.

Mr. Geo. E. Price, mining engineer, is at present managing a large mining enterprise in Surinam, Dutch Guiana. Mr. Price is well known in the Western States, also in Australia, Africa, and South America, where he has been operating.

Mr. S. E. Bretherton, of Silver City, N. M., formerly at the head of the American Smelter, at Leadville, Colo., is spending a few weeks at his old stamping grounds. Mr. Bretherton is the inventor of an apparatus for using molten slag to raise the temperature of the air for blast furnaces.

Mr. William Roslington, representative of F. W. Braun & Company, dealers in assayers' supplies and manufacturers of the Calkins Cupel machine and patent gasoline furnaces, at Los Angeles, Cal., is at present traveling in Colorado in the interests of his firm. He has been in the Cripple Creek District.

OBITUARY.

Alexander Sillman, a pioneer operator in the Lehigh, Pa., coal region, died at Philadelphia on April 30th, at the age of 84 years. Back in the 50's Mr. Silliman and James McKee opened and operated the Mt. Pleasant (now the Harwood) colliery, and in 1860 the Harleigh Mine, which the Harleigh Coal Company purchased in 1863.

Capt. James Harvey, a native of Cornwall, England, died at his home near Phœnixville, Pa., April 30th, of pneumonia, aged about 70 years. Some years ago he operated the copper mines of Schuylkill and Shannonville for the late Charles M. Wheatley. Of late he had charge of the iron mines of the Pulaski Mining Company at Salem, Va.

SOCIETIES AND TECHNICAL SCHOOLS.

Michigan College of Mines.—The upper class students studying mine surveying and mining have left Houghton, Mich., on a 5 weeks' trip to the Lake Superior iron country. They will spend the first 2 weeks in underground surveying work and the remainder of the time in the study of mining methods. Prof. F. W. Sperr, instructor in civil and mining engineering, has charge of the party.

Montana Society of Enginers.—At the regular meeting of the Society, April 14th, at Butte, with about 15 members present, C. C. Vance of Butte was elected to membership. Messrs. J. H. Harper and Samuel Barker, Jr., were appointed a committee to look up suitable rooms for headquarters. A discussion on "Smokestacks and Chimneys" was opened by Mr. E. C. Sickles and Mr. J. H. Harper, and many of the members present spoke on the subject. There were several plans and pictures of various stacks shown, the more important being the plant of a 125-ft. self-supporting steel stack, 4 of which are now in the Butte district; and also a design for a 600-ft. self-supporting steel stack by the Gillette-Herzog Manufacturing Company, submitted during one of the smelter smoke agitations some time ago. This latter proved to be very interesting and the various engineering features in connection with it were discussed by most of the members present.

The Society has received an invitation from the Civil Engineers of France to send 2 delegates to Paris, to the fetes and receptions to be held June 15th to 20th, at which most of the Engineering Societies of the world will be represented. Any member of the Montana Society of Engineers who expects to be in Paris at that time, is requested to send his name to the Secretary.

INDUSTRIAL NOTES.

The new blast furnace of the National Steel Company at Youngstown, O., recently averaged 624 tons of pig per day for a week's run.

Bowes & Company, dealers in mining and irrigation pipe, formerly located at 93 Lake St., Chicago, Ill., have removed their offices to 23 East Lake St.

The Illinois Steel Company has closed a contract with the Chinese railroad authorities for the initial shipment of 300 tons of steel rails, to Tientsin via Shanghai.

The New York, Ontario & Western Railroad Company has recently installed in its shops a duplex steam driven air compressor built by the New York Air Compressor Company.

The Bethlehem Steel Company reports that it has secured an order for crank shaft forgings for an important contract in Australia, the purchase having been made by a representative of the engineers who visited the United States in connection with the work.

The Maryland Steel Company, of Sparrows Point, Md., has received a contract through Tahata & Company, of New York City, for 1,500 tons of 50-pound steel rails, together with the necessary fish plates, bolts, spikes, etc., for the Jiobu Railroad in Japan. The contract calls for shipment to be made in one lot during June.

The reorganized Darlington Brick and Mining Company, of Beaver Falls, Pa., with a capital of $100,000, has purchased the old brick works at Darlington, Pa., and will fit it up with modern machinery to a capacity of 10,000,000 bricks per season. The new company has secured control of coal lands in the vicinity of the brick works.

The National Asphalt Company was incorporated at Trenton, N. J., to mine and deal in asphalt and cement, with a capitalization of $15,000,000, of which $5,000,000 is preferred stock, bearing 6% cumulative dividends. Geo. B. Hanford, Wendel P. Rice, James Murray Mitchell, Percy H. Brundage and Ansel L. White, of New York, are the incorporators. Charles R. Flint is also interested.

It is stated that the United States Tube & Iron Company of Philadelphia will enter into active competition with the National Tube Company in the manufacture of merchant pipe. The capitalization is $300,000. The company is to begin operations in June and make 50 tons butt-weld tubes daily. Officers are Frank M. Lowry, president; T. B. Everson, manager; Robert D. McGonigle, treasurer.

The blast furnace and coke plant of the Cherry Valley Iron Works, at Leetonia, O., have been sold, and a new company, with a capital stock of $350,000, has been formed by Joshua W. Rhodes and Ledlie W. Young, of Pittsburg; Edwin N. Ohl, New Castle, Pa., and Robert W. Flenniken. It is expected that about $100,000 will be spent on betterments. With the plant the purchasers acquired 2,000 acres of coal land.

The Edward P. Allis Company of Milwaukee, Wis., has in hand orders for 43 large blowing engines for various destinations. These engines are from 90 to 110 in. blowing tub. Not long ago 84-in. was the largest size built. The Allis company has already installed up to 100-in. in the Carnegie works. The 43 engines referred to are independent of the smaller blowing engines the company has on hand.

Lambert Hoisting Engine Company has shipped from its works in Newark, N. J., to the Pioneer Mining and Manufacturing Company, near Birmingham, Ala., a hoisting engine for a coal mine. The engine has 14½ by 18 in. cylinders with a total of 120 H.-P. The drum is 5½ ft. in diameter, and 10½ ft. long. The complete machine is mounted on one heavy base, and weighs, complete, over 35,000 lbs. Recently the Lambert works were much enlarged by the erection of a large shop, but the company reports that its works are still unable to keep pace with orders.

Fire on May 5th destroyed the stock house, elevator shaft, coal bins and trestling at the Sloss-Sheffield Steel and Iron Company's Birmingham furnaces. The fire was caused by one of the furnaces bursting and allowing molten iron to ignite the stock house. One of the furnaces will be out of blast several weeks and production at the other one is temporarily stopped. The loss is about $75,000, with loss of profit of iron that could be manufactured at the plant. The furnace was in need of repairs but was kept running.

The American Engineering Works of Chicago reports a very large business of late, including sales of 300 pairs of Anaconda car wheels and axles to the Copper Queen Mining Company of Bisbee, Ariz.; the second carload of standard mine cars equipped with Anaconda wheels and axles to the Tomboy Gold Mines Company of Telluride, Colo.; 50 pairs Anaconda wheels and axles to the Sum Dum Mining Company of Alaska, this being the second shipment to this concern; the Spruce Creek Mining Company, of Eveleth, Minn., has had shipped its third order of a carload of standard mine cars with Anaconda wheels and axles.

The Link Belt Machinery Company of Chicago announces the increased demand for its electric mining and haulage machinery has made it advisable for the firm to retire from the manufacture of electrical machinery, and it has sold to the Goodman Manufacturing Company of Chicago the patents, patterns, stock and goodwill of that part of its business known as the Electrical Mining Machinery Department. The new company, with H. E. Goodman as general manager and Chas. E. Davis as superintendent, will continue the manufacture of the electrical mining machinery and specialties so long made by the Link Belt Company.

The Pelton Water Wheel Company, of New York City, has been awarded a contract for erecting a 1,000-H.-P. plant for the Compania Minera y Beneficiadora de Teziutlan, Teziutlan, Mexico. The contract, which is said to be worth $22,000, calls for 200 tons of material. Two large water wheels will be supplied as well as 3,000 ft. of pipe. Other good-sized foreign orders, which the Pelton Company recently secured, include 3 big water wheels and some thousand feet of pipe, to be shipped to Java by way of San Francisco. This order is valued at about $8,000. A pumping plant for an industrial concern in the interior of Mexico has also been contracted for, and 4 water wheels of 400-H.-P. are about to be forwarded for a plant at Lima, Peru.

TRADE CATALOGUES.

The Goyne separator, a portable device for the individual placer gold miner, is described in an illustrated folder issued by the inventors, W. H. and J. Goyne, of Boston Heights, Va. This device is stated to require comparatively little water, and to be compact, durable and efficient.

Three circulars recently issued by the Westinghouse Electric and Manufacturing Company, of Pittsburg, Pa., are numbered 1024, 1025 and 1026. No. 1024 tells of direct current switchboards, type 7, for currents of 110 to 250 volts; No. 1025 is about alternating current fan motors for 50 to 100 volt circuits, and No. 1026 describes compensators for alternating current circuits.

Testing machines for a great variety of purposes are described in volume 1 of the large illustrated catalogue, published by the Riehle Brothers Testing Machine Company, of Philadelphia, Pa. These machines weigh the strains exerted on test specimens of cement, stone, rope, wire, iron or steel bolts, bars, plates, etc., the capacity ranging up to 300,000 lbs. The Riehle Company also makes hydraulic presses, foundry trucks, sand sifters and the Riehle-Robie ball-bearing screw-jacks.

MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods of any kind, and shall be pleased to furnish them information, catalogues, etc.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, and have no pecuniary interest in buying and selling goods of any kind.

GENERAL MINING NEWS.

CALIFORNIA.

Amador County.

(From Our Special Correspondent.)

Centennial.—The shaft is down 630 ft. and drifts are being run both north and south on the 600-ft. The ore in the south drift shows free gold and the sulphurets are high grade. This property is near Drytown.

Fremont Consolidated.—A large pump has been put in to handle the water in the shaft. The Gover claim belonging to this property is to be pumped out and a hoist erected. These mines are about 2 miles north from Amador City.

Keystone.—The force of men has been increased to over 80, more than half of whom are employed on dead-work. Stoping is going on at the 300, 500, 600 and 800 ft. levels and several drifts are to be extended. On the 800-ft. a stope, 2 sets high and 60 ft. wide, is being mined, the rock from which is known as "gray ore," and assays from $2 to $20 per ton. W. A. Prichard is superintendent.

Valparaiso Mining Company.—This company has been incorporated with a capital stock of 100,000 shares at 25c. each. The officers and directors are: W. F. Detert, president; E. Ginocchio, vice-president; Alfonso Ginocchio, secretary; E. Ginocchio and Brother, treasurer, and D. Barro and G. Poggi. The company will operate the Valparaiso claim, 4½ miles south from Jackson.

Calaveras County.

(From Our Special Correspondent.)

Bluff.—This gravel mine has been purchased by Folsom, Hayden & Walker, who have begun work. An impounding dam has been put in and the water turned on 150 in. under a pressure of 200 ft. is used to hydraulic. The ground is near the Old Table Mountain School-house, between El Dorado and Sheepranch.

Sheepranch.—Seventy men are employed on this property at Sheepranch. The mill is running day and night on good ore.

Del Norte County.

(From Our Special Correspondent.)

Janes Creek.—This hydraulic mine in the Big Flat section was recently purchased by R. C. Hart of San Francisco, who will commence operations at once on a large scale. The ground is large and rich.

El Dorado County.

(From Our Special Correspondent.)

Big Canon.—The shaft is down 700 ft. The vein is wide, carrying low grade ore. The 30 stamp mill runs continuously, the hoist, mill and chlorination works being operated by 125 ft. of hydraulic pressure of water in 13 in. pipes. Fifty men are employed.

Inyo County.

(From Our Special Correspondent.)

Mineral Hill.—A 6-stamp mill, triple discharge, with a capacity of 60 tons per day, has been installed and will start as soon as the tramway from the mine to the mill is ready.

Kern County.

(From Our Special Correspondent.)

Alpine Milling Company.—At the works, 2 miles north from the Searles Borax Works, on the Ballarat Road, cyanide and milling tests are being made on ores in the vicinity.

Big Blue.—The rumor that this group of 18 claims one mile north from Kernville has been purchased by ex-United States Marshal Long of Los Angeles, is unfounded. The property has been practically idle for years, but is regarded as promising if worked on a large scale with ample capital.

Randsburg District.—The Butte Lode Company's run of 45 tons of ore yielded $1,800.

On account of the high charges for water, the owners of the Kenyon Mine have shut down their 2-stamp mill, and have leased an 8-stamp mill at Garlock to which they haul all their ore.

The Yellow Aster Company having had a disagreement with the owners of the Benson Well, have purchased pipe and will lay a line from the new well near Goler, to the mine. The company has removed its headquarters from Randsburg to Los Angeles, Cal.

Madera County.

(From Our Special Correspondent.)

Questo Copper Mining Company.—This company has been incorporated with a capital stock of $5,000. The officers and directors are as follows: A. Questo, president; John Y. Cox, vice-president; R. C. Bole, secretary; Bank of Amador County, treasurer; J. A. Greenwood, general manager, and A. Garminetti. The property which will be operated by the company is located one mile from Dalton Station on the Raymond Railroad, near the property of the California Copper Company on the south. The ledge is said to be 40 ft. in width, assaying about 24% copper, $4.50 gold and about 2½ oz. of silver.

Placer County.

(From Our Special Correspondent.)

Big Dipper.—Seventy-five men are employed at this drift mine, 2 miles southeast from Iowa Hill. The works have been extended about a mile on the channel. From 700 to 900 cars of gravel are mined each week. The company owns its own ditch, 10 miles in length, taking water from Shirttail Canyon. Seymour Waterhouse is general manager.

Dardanelles.—Marchand, McDonald & Vennewitz, who hold the bond on this drift mine near Iowa Hill, are running a bedrock tunnel to strike the gravel.

Plumas County.

(From Our Special Correspondent.)

Jamison.—At this mine 50 men are employed working full time and the mill is kept running steadily. The mine and mill are lighted by electricity. The property is 2 miles south from Johnsville.

Riverside County.

(From Our Special Correspondent.)

O. K.—Eight men are at work at this mine taking out ore from the 250-ft. level. The mill has been moved from Virginia Dale to the mine. The last cleanup yielded a $1,000 brick.

San Diego County.

(From Our Special Correspondent.)

Encinitas.—The shaft in this copper mine is being sunk rapidly, day and night shifts being worked.

Green Mountain.—This mine, being worked by C. A. Ford & Company, has been opened up by several drifts developing a ledge about 30 ft. wide, which carries gold in paying quantities. The greatest depth reached is 70 ft. The property is located south from Whiskeytown.

San Luis Obispo County.

(From Our Special Correspondent.)

Adelaide.—This quicksilver mine is reported to have been sold to the Karl Klau Company for $50,000. The property is to be operated on a large scale.

Shasta County.

(From Our Special Correspondent.)

Donkey.—This copper property in the North Cow Creek District, is reported to have been bonded to J. H. Tibbits, who represents Eastern capital, for $25,000. The 200-ft. shaft already sunk is to be continued, and other development work done.

Hiatt.—This claim in the Quartz Hill District has been bonded for six months by D. B. Hunt for $10,000. The shaft down 80 ft. will be continued and a pumping and hoisting plant installed.

Texas Consolidated.—This mine at old Diggings will be pumped out by the Texas Mining Company, which holds the bind. The extension of the wire ropeway from the old mill across the river to the spur of the main line of the railroad is almost completed. The ore bin recently erected at the spur has a capacity of 100 tons and cars can be loaded directly from it for shipment to the smelters at Keswick. H. C. Woodrow is general manager.

Siskiyou County.

(From Our Special Correspondent.)

Confidence.—The underground workings of this mine, northeast from Sonora, are showing good ore and the 20 stamps are kept busy.

Preston Peak Mining Company.—This company is developing a copper property in the Coast Range on the boundary line of Del Norte and Siskiyou counties, in the Preston Peak Section. The company's works are 15 miles south of the Oregon line. The ledge is said to be 100 ft. wide, carrying rich ore.

Punch Creek.—The tunnel at this mine, 5 miles northwest from Yreka, is in 300 ft. on an 18-in. vein of fair grade ore. Considerable development work has been done on the property.

Trinity County.

(From Our Special Correspondent.)

Lang's Bar Drift Claim.—G. Pelletreau has begun work on a suspension bridge across the Trinity River about 3 miles above Taylor's Flat, to carry a pipe line for bringing water to his claim on Lang's Bar. The mine will be in running order by July 1st.

Tuolumne County.

(From Our Special Correspondent.)

Laurel.—The shaft is now down 220 ft. on a vein from 6 in. to 2 ft. wide. About 75 tons of high grade ore are on the dump. The mine is near Arastraville.

Rawhide.—The bond on this property held by F. M. Bradshaw of Los Angeles, who represents foreign capital, has been extended to June 1st, to enable experts to complete an examination.

COLORADO.

Gilpin County.

(From Our Special Correspondent.)

Mining Deeds and Transfers.—E. J. Adams to A. Lund, 1-6 interest in Magdalene lode; E. J. Adams to P. Erickson, 1-3 interest in Magdalene lode; F. Hepborne to T. M. Miller, 1-10 interest in Oom Paul lode; G. Decker to G. Dempster, ½ interest in Antonio group.

Ore Shipments for April.—The shipments of smelting and crude ore, tailings and concentrates show a total of 186 cars, only about half the usual amount, the falling off being due to heavy snowstorms blocking the roads.

New Machinery.—The new machinery received this week included one 24-H.-P. Fairbanks & Morse gasoline hoist for East Boston Gold Mining Company, 2 carloads of mill machinery for Boston & Denver Mining and Milling Company, a car of machinery for the Crown Point & Virginia Mine at Russell Gulch, a 25-H.-P. hoist for Collins & Company, to be placed on the Mingo lode.

Bonanza.—Leasers are being put in this property and force increased under the management of S. A. Rank. Smelting and milling ore are taken out, and some of the iron runs as high as $150 per ton.

Hillhouse Mining and Milling Company.—This company, capital stock of $500,000, has incorporated to operate in this county, with main office in Denver. F. A. Smith, L. A. Rice, H. Grimm, G. J. Huntbert, E. A. Smith, J. J. Drier and I. Merrill are incorporators.

Lake County—Leadville.

(From Our Special Correspondent.)

Leadville Ore Output.—Despite bad roads, the production for April amounted to about 60,000 tons. The early part of May will show a small tonnage, owing to bad roads.

Bismuth Shipments.—Probably for the first time in the history of Colorado bismuth ore is being exported. The ore is from the Ballard Mine, and lots of 75 tons per month are consigned to Johnson & Mathey, brokers, London, from whom it goes for treatment to Freiberg, Saxony. The ore contains about 8 to 10% bismuth, and runs well in gold, for which the purchasers pay. There are large deposits of bismuth in the Ballard, while other properties on Breece Hill can find the same ore.

Cache Creek Placer.—Manager F. O. Harvey has returned from London, and is arranging to start this important work with English capital; he will also push the 10-mile Arlington ditch to completion by July 1st. The ditch will cost $80,000. The water will be used for both the Cache Creek and Twin Lakes Company Limited placers.

Home Mining Company.—The $50,000 dividend was paid May 1st. The annual meeting will be held June 11th. The most important proposition to be discussed is a consolidation with the New Leadville Mining Company.

Maid of Erin Silver Mines Leasing Company.—This company has a lease on the Old Maid, Henriett and surrounding territory. The ground is worked by sub-leases, and some 27 different sets of leasers are busy, who produced over 5,000 tons in March.

Mikado.—About 10 sets of sub-leases are working different parts of the Mikado ground, on North Iron Hill. Quite a quantity of sulphide ore comes out through the Gallagher shaft.

New Elkhorn Mining Company, Limited.—This proposition, owned by London people, comprises a large acreage in Evans Gulch, that has lain idle some years. C. B. Rogers, the local representative, recently returned from Europe, but has nothing definite to say about resuming work.

New Leadville Mining Company.—This company has a fee simple to 61 acres of good ground

on Rock Hill, including the Little Delaware, Smasher, Ontario, Milton, Ulster, Black and a portion of the Alhambra placer. It desires to consolidate with the Home Company, forming a new company, to be known as the Leadville-Home Consolidated Mining Company, with a capital stock of 1,500,000 shares. Each stockholder of the present Home Company to receive 20 shares of the new capital stock for one.

New Monarch Gold Mining Company.—This company has absorbed the Lida and Old Glory Companies, and includes the 100 acres of the New Monarch Company, the Katy Midnight and other ground of the Lida and the Cleveland, and other territory of the Old Glory Company. The New Monarch is capitalized at $3,000,000, and it is stated that none of the stock is for sale. The company is controlled by a syndicate of Ohio men, of which J. C. Kortz, of Cleveland, is president, and W. A. Miles, secretary. Mr. Timothy Goodwin, of Leadville, is general manager. The ground is well located on Little Ellen Hill, and extensive development work is to be carried forward.

Printer Girl.—This property, on Printer Boy Hill, under lease to J. McAllister et al., shows in a new shaft down 65 ft. a fine vein, assaying 4oz. gold and 20% copper.

Revenue Mining Company.—The new shaft, No. 1, is below 600-ft. mark, and is 50 ft. in gray porphyry. As soon as this is passed drifts will start in all directions for the ore shoots.

Small Hopes Consolidated Mining Company.—Manager Mudd is developing and prospecting in R. A. M. ground through the Marian shaft; 100 tons daily of fine sulphides come from there, and a fine new ore body has been opened in a drift at the 1,400-ft. level. This is 150 ft. deeper than any ore body has yet been cut in the camp, and excites attention from mining men. The new find is a good grade copper sulphide.

Valentine Mining Company.—A new plant of machinery is going up, and the old shaft, known as the Weber, will soon start for the lower contacts. Major Bohn, of Home Mining Company fame, is at the head of this company, for the Eastern people interested.

San Miguel County.

Bridal Veil Mining and Milling Company.—This company, operating in the Telluride District, has elected the following officers: Alexander Ross, Denver, president; C. W. Davis, Waterville, Me., vice-president; C. W. Tilden, Hallowell, Me., secretary and treasurer. The property in Bridal Veil Basin comprises 200 acres, the developments amounting to about 3,000 ft. of underground workings. The mine has shipped some ore, but has not yet started regular shipments. Development is steadily progressing with a force of 10 or 12 men.

Teller County—Cripple Creek.

(From Our Special Correspondent.)

Mining conditions are improved, though considerable trouble is had from surface water caused by the melting snow. Some of the roads are still bad, but are drying up fast. The trouble with regard to high treatment charges seems to be in a fair way to settlement.

Ajax Gold Mining Company.—This company is installing a fine hoisting plant—an Akron-Corliss hoist, made by Webster, Camp & Lane. The cylinders are 20 by 48 in., direct connected. The hoist has 2 drums for flat ropes, and is probably the most powerful hoist in the district at present. It is understood that as soon as the hoist is in place new boilers will be put in. At present 2 Norwalk air compressors are being run that have a capacity of about 5 or 6 drills each. The company's property lies north of the Gold Coin and adjoins the Dead Pine Mine. The shaft is about 600 ft. deep.

Acacia Gold Mining Company.—The Wrockloff lease on the north end of the Burns claim has installed a new 10-drill air compressor, run with gasoline, of Fairbanks, Morse & Company make. Considerable good ore is shipped, most of it coming from the 200-ft. level, where the vein is between 5 and 6 ft. wide. Considerable of this ore is understood to run about 6 oz. to the ton. Besides this lease, the Brady and McGill lease on the main workings is shipping good ore. A little ore is also taken out of the Robinson lease.

Nuggett Mining and Milling Company.—At the annual meeting at Colorado Springs the following directors were elected: C. C. Harris, of Findlay, O., president; J. J. Key, first vice-president; Clarence Edsall, second vice-president, and J. H. Hobbs, secretary and treasurer. The report showed that there were about 9,000 shares of stock and $11,691 in the treasury. A deal to sell the entire holdings to the Nuggett Mining Company, a corporation under the laws of West Virginia, was easily consummated. The new company will be capitalized for 1,250,000 shares of the par value of 50c. The stockholders of the old company will receive share for share, leaving 259,005 shares of stock in the treasury of the new company.

Specimen Gold Mining Company.—The Specimen claim has been sold to J. A. Still, trustee, for $156,000. This claim is on Bull Hill and cuts into the property of the Union Company, of which Mr. Still is president. The most generally accepted opinion is that the property has been bought to be put into a large consolidation which W. S. Stratton is backing. Mr. Stratton has owned for some time the John A. Logan, the American Eagles and a number of other claims in this vicinity, and has recently purchased the Favorite. The control of the Union Company recently passed into the hands of Mr. John Dern, of Salt Lake City, but it is not known whether he is the real owner or only acting as agent. It is also understood that efforts have been made to buy the Lucky Guss, which cuts across the Specimen claim, but it has not been sold. While there is no absolute authority for thinking that such a consolidation is in progress, the circumstantial evidence is very strong.

GEORGIA.

Lumpkin County.

Crown Mountain Gold Mining Company.—At the annual meeting in Dahlonega last week the old officers were re-elected: President, Gen. A. J. Warner; vice-president, Col. J. H. Moore; secretary and treasurer, J. F. Moore. The company is building a new canal at the Seabott Shoals, in order to increase its water power. It has bought the Amicolola Falls in Dawson County as a reserve water power for use when it may be necessary to enlarge its mill.

Dahlonega Consolidated Gold Mining Company.—Water was turned into the large new mill at Dahlonega last week for the purpose of testing the machinery, and everything was found to be in good order. The mill will be started up on a regular run on ore very soon.

Standard Gold Mining Company.—This company has taken possession of the Singleton Mine and the 10-stamp mill, which had been for some time past worked by J. F. Moore under lease. The work of sinking a deep shaft has been begun under charge of J. L. Burns. The company is going to put up a large stamp mill. Work has been begun on a dam 50 ft. high on the Tahoola River, 1 mile from Dahlonega, to furnish power for the new mill.

Rabun County.

Corundum mining is now active, and a good deal of prospecting for corundum deposits is going on.

Eureka Mining Company.—This company is now operating the old Moore Mine, and has been so successful that arrangements are being made to buy more machinery. Mr. Charles Renner is manager for the company, which has its headquarters in Canton, O.

IDAHO.

Ada County.

Independence.—This group is 4½ miles from Boise. A shaft and tunnel show an 8-ft. vein, carrying a high grade streak of gold ore, 10 in. wide.

Idaho County.

Utopian Mining and Milling Company.—This company has a group of 7 claims at Pollock. The vein is wide, but low grade, with copper and gold values. A concentrator is to be erected.

Owyhee County.

De Lamar Mining Company.—The report for March states that 4,490 tons of ore was treated during the month, yielding 2,017 oz. gold, 7,438 oz. silver. The ore assayed $11.89 and the tailings $2.69. The total expenses were $16,051, and the estimated net profit for the month, $16.051.

Pauper.—At this claim, near Silver City, the main shaft is down 500 ft., and is to be sunk 150 ft. deeper. A 3-ft. seam of gold ore is reported cut at the 500 level.

Shoshone County.

Mining Conditions.—Since the riot, a year ago, the Bunker Hill & Sullivan Mill has been rebuilt, the Mammoth, Sixteen to One, Silver King and Hunter companies have each built a mill, and the output of concentrates has increased from 12,000 tons per month to 20,000. The number of men employed in the producing mines has increased from 1,500 to 1,900. At the same time the development work on new properties which a year ago furnished employment to 400 men, now requires about 1,000, and additions are made to the number daily.

MICHIGAN.

Copper—Houghton County.

(From Our Special Correspondent.)

Navigation has opened and most of the mines are shipping. It is estimated that the Bigelow-Lewisohn group of mines has about 5,000 tons of copper awaiting shipment on their docks at Dollar Bay. The steamer "Nichol" was one of the first boats to leave, taking 750 tons of copper from the Calumet & Hecla, Dollar Bay and Quincy docks. The Calumet & Hecla is shipping mineral to its smelters at Buffalo.

Atlantic Mining Company.—The production for April was 207 2-5 tons.

Arcadian Copper Company.—This company has discovered an old shaft on the St. Mary's property, which is down about 3 levels on what is known as the Mesnard epidote. This lies about 300 ft. east of the Pewabic lode and about 100 ft. west of the Albany & Boston conglomerate. As soon as the shaft is unwatered men will be put to crosscutting to both conglomerates. An engine house will be erected and an engine and compressor installed. At the company dock at Hancock a shipment of 1,100 tons of coal has been received.

Baltic Mining Company.—The production for April was 62 3-10 tons. The company has ordered from the Nordberg Manufacturing Company of Milwaukee 2 stamp heads for the new mill, which are to have 20 by 24 in. cylinders and a capacity of 550 tons each daily. Also a compound condensing driving engine for the stamp mill machinery. This machinery will be delivered in about 3 months. Work has already begun on the stamp mill site.

Copper Range Mining Company.—At this company's Champion Mine the lode has been developed for nearly 4,000 ft. and good ground has been opened.

Osceola Mining Company.—Miners working on a salary asked the management for an increase in wages. They formerly got $56 per month, but now receive $60. About 200 men are affected.

Quincy Mining Company.—Production for April was 805 tons.

Rhode Island Mining Company.—Capt. Thomas Dennis, for nearly 30 years head mining captain at the Franklin Mine, has been appointed superintendent and will take charge at once.

Wolverine Mining Company.—Output for April was 231 tons.

Copper—Ontonagon County.

(From Our Special Correspondent.)

Adventure.—The Butler lode has been reached by a crosscut from No. 2 shaft, and from present indications it is promising.

Iron—Marquette Range.

Negaunee.—At this mine, near Negaunee, the new shaft is down in the ledge 25 ft., but a heavy flow of water has stopped work until a larger pump is installed.

Iron—Menominee Range.

Bristol.—This Crystal Falls mine is owned by Oglebay, Norton & Company, of Cleveland, O. During the winter a Lidgerwood hoist has been put in at No. 3 shaft, and a large Gates ore crusher capable of handling 1,000 tons daily. The shaft is now down 270 ft.; a block of ore 200 ft. long, 7 ft. high and 20 ft. thick is exposed. The ore is low grade, and carries some manganese. Capt. A. Frangquist is manager.

MINNESOTA.

(From Our Special Correspondent.)

Ore shipments from Two Harbors last week, the first week of the shipping season, averaged 20,000 gross tons daily, or about 700 cars—a remarkable business for a start. The Duluth & Iron Range road expects to receive its 112,000-lb. pressed steel cars soon. Its double-track work is practically completed.

Contractors have begun work on the 50-mile cutoff for the Eastern Minnesota road to Virginia, and will employ about 2,000 men all the year. The same contractors are building lines into the Stevenson and Clark Mines.

Labor is scarce at some of the mines, as well as at stripping contracts. Italians are being imported and put at work.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Minnesota Iron Company.—This company's mines are shipping from stockpile. Fayal has 3 steam shovels working—two in its open pit and one in the stock—and is shipping 7,500 tons a day Auburn has one in the stock and is shipping 2,000 tons a day. Genoa has 160,000 tons in stock and will be at it next week. Elba is shipping its splendid coarse brown ore rapidly from both pockets.

Penobscot Mining Company.—This mine is placing the largest pumping plant ever put in an iron mine. Miners are working on 3 levels to the depth of 300 ft., and will mine 125,000 tons this year. A shaft has been sunk in the rock to carry water; about 4,000 gal. a minute are raised. There is one ore shaft—3-compartment—with skips of 3½ tons. The mine is electric lighted throughout. There are 2 rooms at the 300-ft. level, each 60 ft. long, 20 ft. wide and 16 ft. high, for the pumps, and a boiler room, 42 ft. square, in which are 3 250-H. P. Wicks water-tube boilers.

Rood Explorations.—At the west ½ of the s w ¼ of section 32, T. 58, R. 20 several pits have been sunk into a good non-Bessemer ore, and have shown up on 6 acres about 5,000,000 tons, with the extent of the ore body undetermined. They have run into taconite at from 100 to 190 ft. in all pits but No. 11, which is down 450 ft. and still going deeper in ore, the lower 150 ft. being good Bessemer, averaging above 60% iron. The explorers have options for a 25c. lease. The

deepest hole shows one of the thickest ore deposits on the Mesabi.

Sharon Steel Company.—This company, which bought the Brodie Mine, in T. 58, R. 19, the other day for $150,000, will begin at once to open the property, and will make it a shipper from this year. The mine is a deep deposit, but has little surface. It is large and valuable.

Spruce.—This mine, at Eveleth, has its main shaft down 190 ft., and sinking has stopped. The fine shafthouse is completed, drifting is in progress and considerable ore is being hoisted. At No. 2 shaft a pump station 35 ft. long by 16 in other dimensions has been cut, and a 700-gal. Prescott pump is installed. No. 3 shaft is down 80 ft., 15 of which are in ore, and will be connected with No. 2 by a drift, already started. This mine, surface work on which began about January 1st, will probably ship 125,000 tons this year.

Stevenson.—This mine, in the west side of T. 57, R. 21, is ready for shipments, with two shafts 100 ft. deep. It will be 5 or 6 weeks before the railroad is at the mine.

Iron—Vermilion Range.

(From Our Special Correspondent.)

It is reported that the Minnesota Iron Company is to reopen the Lee Mine, near Tower, and will begin sinking a new shaft there shortly.

Mahoning Ore and Steel Company.—This company has removed the drill it had at the Roy exploration, and set it at work at Armstrong Lake. It is the current report that the company is satisfied that it has a mine at the Roy.

MISSOURI.

Jasper County.

(From Our Special Correspondent.).

Joplin Ore Market.—The market for zinc ore has been unsettled for 3 weeks, and last week the price was so unsatisfactory to producers of high grade ore that many held for an advance. The highest price paid was for the ore from the Conqueror Mine, in Chitwood Hollow, at Joplin, $31.50 per ton. With few exceptions, the price was cut from 50c. to $1. Lead sold all the week at $27 per 1,000 lbs. It was reported that the Edgar Zinc Company paid $34.50 for 7 or 8 cars at the Pleasant Valley Mines, at Carthage, but this report could not be verified. It is known, however that the Edgar Company offered $22 per ton for 300 tons of the high grade Sphynx ore at Neck City to-day, April 7th, and offered to contract for 3 weeks' additional output at this price.

During the corresponding week last year zinc ore sold at $50 per ton and lead at $26 per 1,000 lbs. The sales of lead were less than last week by 486,410 lbs.; the zinc sales were greater by 658,490 lbs., and the value greater by $82,258 For the first 18 weeks last year the lead sales were less than this year by 4,131,470 lbs; the zinc sales greater by 9,174,320 lbs., and the value greater by $693,746. As compared with the previous week the lead sales were greater by 189,070 lbs.; the zinc sales less by 1,672,490 lbs., and the value less by $19,728. Following is the output of the Joplin district by camps for the week ending Saturday, May 5th:

	Zinc, lbs.	Lead, lbs.	Value.
Joplin	2,149,930	658,230	$50,984
Galena-Empire	1,934,340	331,760	32,739
Carterville	1,249,850	235,360	24,494
Belleville	440,790	2,550	6,680
Webb City	696,140	61,150	11,397
Duenweg	297,850	63,700	5,624
Oronogo	904,280	2,050	13,397
Cave Springs	70,740	1,990	1,608
South Jackson	58,820	15,450	1,211
Aurora	1,170,000	24,700	13,805
Carl Junction	126,410	..	1,830
Granby	330,900	18,000	4,300
Stotts City	85,820	.....	1,287
Dade County	63,700	.....	637
Ash Grove	52,700	.....	527
Neck City	31,120	.....	.....
District total	9,554,680	1,414,840	$174,032
Total 18 weeks	173,911,070	20,503,580	$3,186,518

The Condor and Naulakah Mines, on the ground of the Continental Zinc Company have been transferred to the Kohinoor Zinc Company, of Boston, for $30,000. The sale was made by Morgan, Glover & Snyder. The Club mine on the same ground was sold to the same company for $12,500.

MONTANA.

The strike on the Montana Central branch of the Great Northern Railroad was settled May 6th, the employees accepting a proposition made by the railroad company to keep their time under the old and proposed new schedules and allow the men to select the one paying the highest salaries. Work has been resumed at the Boston and Montana Smelter at Great Falls, and the Belt Coal mines.

Flathead County.

Snowshoe.—The concentrator at this mine at Libby has started, and shipments of concentrates have begun. The mine is equipped with Rand drills and an air compressor. The main tunnel is in 1,800 ft. The mine is controlled by the Pacific Northwest Mining Company, of which H. E. West is general manager.

Granite County.

Gold Elsie.—New York men have started work on this mine at Philipsburg. The ore is low grade, but can be opened cheaply by a tunnel from Rock Creek.

Jefferson County.

Baltimore.—Butte men have taken a bond for $20,000, with a 20% royalty on ore shipped, on this mine, 2 miles north of Boulder.

Madison County.

Old Joe.—W. W. Morris has taken over this mine at Pony. The purchase price reported is $15,000.

Strawberry.—J. F. Cowan has taken a lease and bond on this claim at Pony, and is to erect a 50-ton concentrator by July 1st.

Silver Bow County.

Boston & Montana Mining Company.—The State Supreme Court, on May 8th, reversed Judge Clancy, of the District Court of Butte, who denied the application of the Boston and Montana Mining Company for an order vacating the order appointing Thomas R. Hinds receiver of the company's properties and remanded the cause with instructions to the lower court to admit evidence excluded and to hear and determine the motion according to the expressed views of the higher court. The Boston & Montana Company offered to prove that it had reconveyed the property which it had transferred to the New York corporation back to the Montana corporation as evidence to show that there was no longer any necessity for a receiver for the property. The lower court declined to consider the evidence and denied the company's motion to vacate the order of Dec. 15, 1898, appointing Mr. Hinds receiver. The Supreme Court says: "The offer made by the defendants which the court should have required the plaintiffs to accept renders it unnecessary to continue the receivership for the purpose of an accounting. The order refusing to vacate the order of December 15th, 1898, is therefore reversed and the cause is remanded with directions to the court below and its Judge to admit the evidence and the offer excluded and proceed to hear and determine the motion in accordance with the views herein expressed.

OREGON.

Lane County—Bohemia District.

(From Our Special Correspondent.)

Blue River District.—Much excitement has been caused within the week by several rich strikes in that part of the district between Blue River and Simmon's Creek, about 5 miles southeast of the Lucky Boy, and prospectors are rushing in from the rest of the district.

Helena.—A suit in ejectment was tried last month in the United States Circuit Court at Portland. The present owners, Messrs. Jennings & Bruneau, were defendants, and C. G. Warner, et al, plaintiffs. Jennings & Bruneau were confirmed in their title and a temporary injunction was dissolved, allowing ore to be milled for the first time. At present there is only a 5-stamp mill on the property, but the bullion returns show $12,000 per week for the past 3 weeks, a rich streak being milled first. Outside this rich streak the ore averages $20 per ton, free, though most of the ground is already located. Reports of assays average $35 gold. The ore is free milling.

Lucky Boy.—This mine continues to run 10 stamps, 24 hours per day, and although bullion returns are not made public, the owners are well satisfied and expect to add 40 stamps in July. An uprise 230 ft. in on the 2d level is nearly to the surface and the ore will be stoped. Heretofore the mill has been running on ore cut from the mouths of levels 1 and 2 and from the drifts of level No. 1.

Noonday.—A shaft now 25 ft. deep is being sunk on a base vein at the west end of the third level. The vein is 4 ft. wide and assays $7 in gold and high in copper. The shaft will be sunk 100 ft.

PENNSYLVANIA.

Anthracite Coal.

Parish Coal Company.—At this company's Buttonwood Colliery, on May 9th, some 200 striking miners, mostly Slavs, attempted to prevent other miners from going to work, and a riot followed. So far as known no one was fatally injured, but Superintendent W. T. Smyth was knocked down and seriously hurt.

Bituminous Coal.

(From Our Special Correspondent.)

Six hundred acres of the Pittsburg seam of Youghiogheny River coal held under option for nearly a year past by S. E. Frock and Cyrus Echard of Connellsville have been sold to James Cochran's Sons of Dawson. The company is composed of Henry T. Cochran, W. H. Cochran, and A. J. Cochran. The price paid was a little over $94,000. The coal lies in one tract on Cedar Creek in Rostraver Township, Westmoreland County. It is on the Pittsburg, McKeesport & Youghiogheny railroad, but a branch of 3 miles will be built up Cedar Creek. Last July, Frock and Echard purchased the coal under the following farms: Patterson heirs, 200 acres; Henry Hartmann, 108 acres; William Scholl, 83 acres; Amzi Morgan, 95 acres; Bela B. Smith, 115 acres, and the Cope plot of 1 acre. The coal was not held a year, and in that time it nearly doubled in price. It is stated on pretty reliable authority that the Pittsburg Coal Company recently offered the purchasers $12,000 cash for their bargain. At Port Royal coke is made and it may be that the Cochran's sons will extend their coking operations in coke making to their new holdings. A shaft 165 ft. deep will have to be sunk. The field adjoins that of the Pittsburg Coal Company.

A peculiar feature of the purchase of 1,000 acres of coal land by Bliss & Marshall between the Cheat and the Monongahela rivers, in southern Fayette County and over in West Virginia, is that this makes a direct connecting link between the North and the South, and now there is a continuous line of blazing coke ovens from Bradenville and Latrobe, in Westmoreland County, through Connellsville, to Fairchance, Masontown, and on to the coke fields of West Virginia. From Latrobe to Masontown is about 40 miles. The new tract purchased by Bliss & Marshall, who originally owned the Percy works in the Connellsville field and later built the Kyle works, now owned by the H. C. Frick Coke Company, is partially in Fayette County, and partly in Monongahela County, W. Va.

The Colonial Coke Company, capitalized at $50,000, divided into 500 shares of $100 each, has filed its charter at Uniontown. The stockholders are mostly Fayette County people, and will develop a tract of coal south of Uniontown.

Tioga County.

Gaines District Oil Wells.—A lot of sensational stuff has appeared in the daily press about some oil wells drilled near Gaines. The sand is a new one and is shallow. The Blossburg well, No. 1, started in to flow about 500 bbls. a day some 6 or 8 weeks ago, but is now flowing at the rate of only 18 bbls. a day. No. 2 Blossburg, which began to flow at the rate of 50 bbls. a day declined almost to nothing, and is now up to about 50 bbls. again. Blossburg No. 3, about which there has been so much excitement, flowed at one time at the rate of 2,200 bbls. a day, but dropped to 300 bbls., and then to 30 bbls. It is now proposed to tube the well and pump the oil and a steady production of about 200 bbls. a day is expected.

RHODE ISLAND.

Newport County.

Compressed Coal Company.—This concern, which started to reopen the coal mine at Portsmouth and make briquettes from the old culm pile is still in the hands of an assignee. The briquetting machinery it erected has been discarded and the mine is nearly full of water again. A new process of briquetting is to be tried. An addition of 100 by 20 ft. to former building has been erected and the Zwoyer Fuel Company of Reading, Pa., has installed new machinery. A casual inspection of the plant shows that the new machinery embraces no jigs or other devices to clean the culm. Rhode Island anthracite at best is not free burning and briquettes made from the culm pile without any attempt to remove impurities are not likely to give satisfaction for domestic use. The new plant is modelled in some respects after that erected at Edison, N. J., for briquetting iron ore concentrates. A "secret" chemical possessing great merit is to be employed as a binder instead of coal tar. This "secret" chemical is apparently a mixture of rosin and crude petroleum.

SOUTH DAKOTA.

Lawrence County.

(From Our Special Correspondent.)

American Mining Company.—The shaft that this company is putting down in Spearfish Canyon is 240 ft. deep. Quartzite will be reached in 200 ft. more, at which depth a tunnel will be started under Ragged Top.

Baltimore & Deadwood.—It is stated that this company is being reorganized in Chicago, and that work at the mine and mill at Gayville will soon be resumed.

Bullion.—Work has begun again in the Bullion Mine, in Galena District. Dr. H. H. Muggley, of Chicago, has purchased the mine.

Calamity Gulch Cyanide Plant.—This 25-ton plant, at Ragged Top, is making a remarkable success. It is owned by Allen, Small and associates, and is treating lime ore from the Black Diamond claims, owned by Albe Homes, of Deadwood. The ore averages about $10 per ton gold, and crushes easily. A high percentage of extraction is obtained. The plant is to be enlarged.

Galena Mining Company.—H. H. Armstead, of New York City, general superintendent, has gone to Chicago to purchase an air compressor

for the Eureka Mine. The power drills have been worked heretofore by steam.

Golden Reward Company.—This company is trying to get rid of the slag at its smelter by running it into a tank, granulating it and dumping it into the creek, where it is carried down stream. About 200 tons per day are taken care of. The company has been pressed for dumping room for some time.

Gold Hill Mining Company.—This company, composed of Omaha, Neb., business men, is sinking a shaft to quartzite over the divide from Ragged Top. A steam hoisting plant has been purchased from one of the old mines in Cartonate Camp. Quartzite will be reached in about 200 ft.

Howard Gold Mining Company.—This company has been organized to develop 200 acres of ground in Two Bit and Grizzly Gulch.

Labrador.—A vein of sylvanite ore is reported in this group of claims in Squaw Creek District, west of Deadwood, now bonded io the William A. Otis Company of Colorado Springs, Colo. C. D. Wood, of Denver, is general manager.

Portland Mining Company.—This company has begun shipping to the cyanide plant at Spearfish. Ninety tons per day are shipped to this place and to the cyanide plant at Deadwood.

Shawmut Mining Company.—Edison Dewey, president, and B. J. Heath, treasurer, both of Boston, have become largely interested in the Dakota Mining Company, which owns and operates the Gunnison and Jack Point mines, at Portland. Mr. Dewey has been elected a director.

South Dakota Company.—This company has bonded all of its mining ground on Annie Creek to the Detroit & Deadwood Company, of Detroit. The latter company has purchased 2 claims from Louis Walters and Joseph Wenger on Annie Creek, and ground is being broken for a large cyanide plant.

Titanic Mining Company.—The annual election of officers resulted as follows: President, H. R. Bartlett, Spearfish, S. D.; vice-president, M. A. Wilcox, Terry; secretary, W. S. Elder, Deadwood; treasurer, O. S. Jewett, Deadwood. A shaft will be sunk to quartzite on the south end of the 800 acres it owns.

TENNESSEE.

Knox County.

Ducktown Coal & Copper Company.—This company recently awarded a contract to Shea & Coof of Knoxville for building a railroad from the company's smelter to its mines.

UTAH.

(From Our Special Correspondent.)

Bingham Copper and Gold Smelter.—Grading for the new plant is all finished, some 10 days ahead of schedule. The material for construction is about to arrive.

Bullion and Ore Shipments.—During the week ending May 5th there were sent forward from the different smelteries 32 cars, or 1,343,090 lbs., lead-silver bullion; 4 cars, or 190,591 lbs., copper bullion. In the same week there were shipped from the different camps to smelteries outside of the State for treatment 90 cars, or 3,693,460 lbs., lead-silver ore and 4 cars, or 174,000 lbs., copper ore.

Juab County.

(From Our Special Correspondent.)

Tintic Shipments.—In the week of May 5th there were sent forward from the 3 railroad points of the district 75 cars of ore, 4 cars of concentrates and 1 bar of bullion, contributed as follows: Centennial-Eureka, 28 cars; Swansea, 16 cars; Gemini, 10 cars; May Day, 6 cars; Uncle Sam, 6 cars: Godiva, 4 cars; Mammoth, 2 cars concentrates and 1 bar bullion; Bullion-Beck, 2 cars concentrates; Tesora, 1 car of ore.

Alaska.—On May 4th at Salt Lake City was held the annual meeting. The officers and directors for the current year are: W. H. Webster, president-treasurer; Lindsey H. Rogers, vice-president: Morris R. Hunt, secretary-assistant treasurer; these with J. R. Case and E. P. Jennings compose the directorate. The mine is reported in good physical condition, and the shaft will be at the 450 station on May 10th.

Summit County.

(From Our Special Correspondent.)

Park City Shipments.—In the week of May 5th the total smelting products sent from the camp were 3,060,835 lbs, contributed as follows: Silver King, crude, 1,060,515 lbs.; concentrates, 317,850 lbs.: Daly-West, crude, 665,025 lbs; concentrates, 411,355 lbs.; Ontario, crude, 301,210 lbs.; Anchor, concentrates, 204,980 lbs.; Apex, 99,900 lbs. For April the shipments were: Silver King, crude, 4,-096,690 lbs.; concentrates, 1,110,715 lbs.; Daly-West, crude, 2,519,230 lbs.; concentrates, 1,065,850 lbs.; Anchor, concentrates, 886,690 lbs.; Apex, concentrates, 117,430 lbs.; Ontario, crude, 664,100 lbs.; Valeo, crude, 200,860; Apex, crude, 12,330—making a total of 10,673,855 lbs. In addition, there was sent out 7,399 lbs. of silver sulphides from the Marsac mill, to be credited to the Ontario. Referring back to April, 1899, it is found that the only shipments for the month were 596,715 lbs. concentrates, supplied by the Anchor. The roads were blocked with snow, and generally the camp was tied up.

WEST VIRGINIA.

Fayette County.

(From Our Special Correspondent.)

W. R. Johnson & Company, of Harewood, J. J. Lovell, superintendent, are preparing to put in a river tipple at their coal and coke plant at that place.

Kanawha County.

(From Our Special Correspondent.)

The mine of the old Peel Splint Coal Company, at Peel, which has been idle for a number of years, is being put in shape again and will be put in opration in a short time.

WYOMING.

(From Our Special Correspondent.)

Superior Oil Company.—This company has filed articles of incorporation. Capitalization, $10,500,-000; headquarters at Casper. This corporation has absorbed the Pennsylvania Oil Company. It is reported that a large amount of English capital is interested and this seems very reasonable, since Boverton Redwood made several examinations in the vicinity of Casper last fall. At present the old company has 10 producing wells and a refining plant at Casper sufficient to handle the output. The great drawback has been a 50-mile wagon haul. The new company has an abundance of capital and will construct a pipe line from the wells to Casper. The refinery is to be increased and a large number of new wells drilled. This is the largest company, outside of the railroads, that has ever incorporated in Wyoming.

Carbon County.

(From Our Special Correspondent.)

Ferrin-Haggerty.—Work is progressing nicely. The main shaft is down nearly 200 ft. and a second level will soon be cut. Large quantities of ore, considering the development, are shipped. Twenty 6-horse trams are hauling the ore to the railroad. The production averages 550,000 lbs. of copper ore per month. The property has already shown itself a great mine. Besides the high grade shipped, there are large reserves of medium grade and a large storage on the dump which will make an excellent concentration proposition.

Sunlight District.—This is a comparatively new camp located just east of the National Park. The country rock is a volcanic buccia cut by numerous dikes. The veins are associated with the dikes and contain ores of lead, silver, coper and gold above the average in richness. The Burlington Railroad is building in to the Big Horn Basin, and while it will not pass the district, it will be sufficiently near at Cody City to greatly stimulate the new discoveries at Sunlight.

FOREIGN MINING NEWS.

ASIA.

India—Mysore.

The production of the Colar Gold-field in March is reported at 41,033 oz. crude gold. For the three months ending March 31st, the output was 122,178 oz., which compares with 100,243 oz. last year, 100,622 oz. in 1898, and 91,139 oz. in 1897. The total this year was equivalent to 109,960 oz. fine gold, or $2,272,873.

AUSTRALIA.

New Zealand.

The Mines Department states the exports of gold and silver from New Zealand as below, in ounces.

	Gold		Silver	
	1899.	1900.	1899.	1900
February	21,729	18,125	31,934	29,593
Two months.....	54,978	56,414	68,813	77,167

For the two months the increase in gold was 1,436 oz., or 2.6%; while there was a decrease of 8,324 oz., or 12.1%, in silver. The gold this year was equal to 51,530 oz. fine, or $1,065,110.

Western Australia—Kalgoorlie District.

The February output was the lowest for 8 months.

The Mines Department reports the production of gold in February at 121,062 oz. For the two months ending February 28th the production was 224,700 oz.

Associated Mines.—The company treated during February 5,137 tons for 3,763 oz. The president of the company, a Mr. Landau, has been at the mine, and made matters lively for some individuals. The position of manager has gone a-begging. Mr. Landau, after offering the position to 3 or more managers of Kalgoorlie mines, temporarily appointed Prof. Living, of the York School of Mines, a gentleman brought from England to report on the surface, at the same time that Messrs. Frecheville & Angove came to sample and report on the work underground. Messrs. Irwin, Temby and Grayson, the manager, assistant manager and metallurgist resigned, and now Mr. Dennis, the underground manager, after 3 months' service, resigns, as does Mr. Jones, the engineer. Captain William Dick, late manager of the Horseshoe Mine, has been appointed consulting engineer of the underground department; Mr. Dunstan of Broken Hill, N. S. W., has been appointed metallurgist; Mr. Bristowe, Adelaide, is comptroller of finance. The trouble has been unnecessary interference on the part of the London Board of Directors. Some of the old Board were interested in the West Australia Smelting Works at Fremantle, and they made a contract with the W. A. Smelting Company to ship 100 tons per day of 3-oz. ore. As a result, the best ore was shipped, and the lower grade does not pay expenses; the loss during the last 3 months has been close to £10,000 per month, yet the mine sells at nearly £3,000,000. That is one of the advantages of having a prominent stockbroker as chairman of directors. Two only of the 4 furnaces are at work. It is reported that from the sulphide ore the extraction is below 70%. This plant, the chairman stated last November, cost £300,000, nearly $1,500,000. The mine may be said to be a big low-grade proposition; future developments will probably show large bodies of 1¼-oz. ore sulphide, which will have to be handled economically to pay dividends. It is believed that the present plant is too unwieldy to treat the ore cheaply.

Great Boulder Main Reef.—This mine is treating the sulphide tailings by sliming and filter pressing, and obtaining 90% extraction on 70 tons per day. The officers claim a 95% extraction, treating only 50 tons per day. The process first tried here is simplicity itself. The tailings are trammed to a mixer with a propeller blade at the bottom; the cyanide solution flows to the mixer; from the mixer the sand is carried to 6 grinding pans, which reduce the sand to a slime; from the pans the slime is pumped to the 4 filter presses ,and in 6 hours, or less, the slime is on the waste heap. The solution has deposited the gold in the zinc shavings, and is again on its way to the mixer. The mine output in February was 1,488 oz.

Great Boulder Perserverance.—The plant is now assuming mammoth proportions, and from the manner in which the mine is being developed will not be idle for want of ore. The ore is supposed to run about 2 oz. Machinery has been slow in arriving. The output for February, from oxidized ores, was 2,089 oz. from 1,815 tons, a slight decrease from January output, 2,291 oz.

Lake View Consols.—The output for February was a little over 12,000 oz., including smelting ore, 500 tons of over 15 oz. per ton. At the sulphide mill, the Chilian mills are being replaced by No. 8 Krupp ball mills, and the Brown furnaces are doing better work than they have ever done on the field; the capacity is, however, limited to about 30 tons per furnace. The mine is opening up well at the 4th and 5th levels. This mine had produced 370,604 oz. of gold at the end of 1899, or in 5 years' work, and all above the 300-ft. level. The first 14 months of crushing yielded 10,428 oz., or 744 oz. per month. It is still reported that Dr. Diehl's process is to be adopted and the 50 stamps will soon be in requisition. The average of the ore shipped during 6 months of 1899 was 39 oz. per ton. The first 400-ton lot shipped yielded 22,000 oz. The yield was straight, legitimate work. One week the face of the drift for 8 ft. wide yielded, according to mine assays, 101 oz. per ton. Machine drills were used one shift, as the ore was sacked underground, without any attempt at sorting. This mine undoubtedly holds the record of the richest and largest ore shoot of telluride gold ore ever found..

CANADA.

British Columbia—West Kootenay District.

Mining Conditions in Boundary Division.—While most of the mines in the Boundary District are closed down the Knob, Hill, Iron Sides and B. C. are running. The Grand Forks Smelter, it is stated, will be running June 15th.

Hydraulic properties on French and Swift Creeks in the Columbia Valley, north of Revelstoke, owned by the French Creek and the Columbia Hydraulic mining companies, concerns controlled by E. B. Lee, of Chicago; William Trump, of Pittsburg, Pa.; C. T. Kennan, of Milwaukee, and other Americans, have been transferred to the Mines Contract and Investigation Company, of Toronto, Limited. The Columbia property comprises 3 claims of 500 acres on Swift Creek, extending 1½ miles along a gravel bed, partially opened. The plant includes two 8-in. monitors and cost $35,000. The French Creek properties comprise 5 claims of 600 acres, extending along a gravel bench, with 20 to 80 ft. of gravel. There are 3 9-in. monitors capable of washing 10,000 to 12,000 cubic yards per diem., supplied by a pipe with 412 ft. head. The flume, 12,000 ft. long, is carried through several heavy cuts, over 3,400 ft. of trestle, and 2 high bridges and through 2 tunnels, bringing an ample supply of water from high mountains behind. A sawmill, with a 2,800-ft. logging flume, is on the ground. The cost of the plant exceeded $100,000.

Its erection began late in 1897. Three other claims—the Revelstoke, Vancouver and Victoria—along the bed of French Creek, immediately above the property of the Consolation Mining Company, have also been acquired, as well as the town site of La Porte, at the head of navigation on the Columbia River. The miners are to receive, besides wages, a percentage of the net profits.

The town of Sandon, about 20 miles from Kaslo, was wiped out by fire on May 4th. Damage is reported to some of the silver mines, which were just starting work on a large scale after the 9 months' strike. The loss is put at over $200,000.

Last Chance.—Frank Woods, superintendent of this mine, on Noble Fire Mountain, near Kario, has, it is stated, disposed of his 1-10 interest in the mine to Dr. Hendricks, of Minneapolis, a large stockholder.

(From Our Special Correspondent.)

Rossland Ore Shipments.—The output for the 4 months ending April 30th amounted to 38,000 tons.

Brandon & Golden Crown.—There are 3 dumps on which the ore has been placed at this Boundary Division Mine. The ore in No. 1 has been estimated at 764 tons, valued at $13 per ton; total value, $10,192. No. 2 contains ore of a higher grade, which has been sorted, and amounts to 120 tons, valued at $28.50; total value $3,420. No. 3 is an ore vein containing 266 tons, valued at $32.35 per ton, valued at $8,661, making an entire total of 1,150 tons. valued at $22,282. The output is now 50 tons per day. This information is furnished by the secretary of the company, W. L. Orde.

Cariboo.—A force of 50 men is at work in this mine, in Boundary Division.

Josie.—A new compressor is to be installed and ore shipments will not be made until this is done.

Last Chance.—The management of this Slocan mine is working 65 men.

No. 1.—The shaft is down 587 ft. and the work is in crosscuts. , No ore shipments have been made yet.

Nova Scotia—Cape Breton.

Dominion Coal Company.—The coal shipments from the mines in April were 95,700 tons. For the four months ending April 30th the shipments were 377,100 tons, against 148,586 tons in 1899.

Ontario—Rainy Lake District.

(From Our Special Correspondent.)

Navigation has opened, and there seems to be the usual spring rush, though mining matters have taken such a turn that a black eye has been given many properties in the district.

Eldorado.—This mine is receiving a carload of machinery and will be opened at once. It is so located that it can be very easily worked, and the fissure vein is 18 ft. wide.

Mikado Gold Mining Company.—This company meets in London, May 27th, at which a report will recommend a 5% dividend, and a rearrangement of the capital of the company to such an extent that its output can be doubled by the installation of 20 or 30 more stamps.

West End Silver Mountain.—This mine is working steadily, and is shipping ore to Omaha this week via Duluth. Led by the success of this long abandoned mine, other silver mines may be reopened.

COAL TRADE REVIEW.

New York. May 11.

Anthracite.

According to the preliminary estimate, the output of coal for April was 3,273,818 tons, compared with 3,078,088 tons in 1899. The estimated output for May is 3,000,000 tons. As we hear of no noteworthy accumulation of stocks, the May estimate is a fair one. The large concerns are holding their production well in hand and the present outlook is that they will control the situation later in the year.

Trade in all anthracite burning territory is quiet. There is considerable coal going West and a fair demand for this time of the year from points beyond Cape Cod. In Chicago territory there is little doing and little more at the head of the Lakes. The spring price lists show advances over last year, as is to be expected with the high lake freights. In the East the market at Boston is reported pretty firm. At New York and Philadelphia buyers may be expected to hold off for some time yet.

There are scattered strikes at the collieries, but no movement is visible as yet toward a general strike. The mines are working short time.

Prices at New York are unchanged, and there are no rumors of serious cuts or concessions. We continue to quote for free-furning white ash coal f. o. b. New York: Broken, $3.05@$3.20; egg, $3.30@$3.50; nut, $3.60@$3.70; stove, $3.60@$3.70; pea, $2.40@$2.80; buckwheat, $2.10@$2.35.

Notes of the Week.

According to a press dispatch, the British steamship "Accomac" has been chartered to load 3,500 tons of anthracite at Philadelphia, for Cronstadt, Russia, at the rate of 17s. a ton. This charter calls for June shipment, and will be the first of some hard coal that is to be shipped from Philadelphia to Russian ports in the Baltic. In fact, the cargo will be the first of its kind ever shipped to a European port, though the Reading Company sent a cargo or so abroad some years ago.

Bituminous.

The Atlantic seaboard soft coal trade is actually dull. More coal is being offered than consumers seem to need and prices continue to fall. Any consumer can get all the Clearfield coal he wants for $2.50 f. o. b. New York Harbor port and it is reported that a speculative cargo sold as low as $2.50 alongside at Boston. The average selling price at Boston, however, is probably nearer $3. Consumers are improving their opportunities to some extent, and there is considerable stocking up in certain territories.

The George's Creek strike is still in progress. On May 8th several mines had a large number of men apply for their tools and go to work. Union miners and their sympathizers, however, mobbed the men, driving them from the mines and seriously injuring several. Since then there has been no attempt to resume work.

Trade in the far East is dull and consumers are able to get more coal than they require. There is no pressure for coal along the Sound nor at New York Harbor. The all-rail trade shows a slight falling off in the tonnage forwarded.

The demand from abroad continues heavy and all producers of good coal have been approached with inquiries. Coal is going abroad steadily, though no concerns care to take large orders for future delivery. However, this demand will prove welcome to producers in case prices on this side fall off badly, and will act as a brake on any decline.

Transportation from mines to tide is good and car supply is up to the demand. In the coastwise vessel market large vessels are in good supply, but small craft are scarce, there being practically none at the lower ports. We quote ocean freight rates from Philadelphia as follows: Providence, New Bedford and the Sound, 60@70c.; Boston, Salem and Wareham, 75@80c.; Portsmouth, 80c.; Lynn, 85@90c.; Bath and Bangor, 80@90c.; Gardiner, 85c.; Dover, $1.10 and towages; Saco, $1 and towages.

Birmingham, Ala. May 7.

(From Our Special Correspondent.)

Alabama's coal mines are very active, and there is a ready sale for the product. Orders are to be found on some operators' books calling for a full production for months ahead. Indications are that during the summer some new mines will be opened, and their production will be readily sold. The Louisville & Nashville Railroad is bringing a little coal for its own use from Kentucky and other States, in order to relieve the stress on the mines in Alabama. The export trade is still fair, and efforts are being made to avoid further business in this channel, the domestic and local markets being sufficient to take up all the coal that can be produced.

While nothing is being given out, there is a little uneasiness felt concerning the new scale with the miners, effective July 1st. The executive board of the United Mine Workers in Alabama will meet in Birmingham on May 25th to fix a date for the scale convention, which will be either June 18th or the 25th. Whether the miners propose to ask for a higher scale remains to be seen. None of their leaders will be interviewed on the subject. The miners have been working steadily since the signing of the present contract in July last; the wages, based on the selling price of pig iron, have been the best in several years. Every effort will be made to avoid trouble next month in the signing of the new contract.

The shipments of coal down the Mississippi River to the New Orleans and lower Mississippi River trade are still exceedingly active. The Alabama Block Coal Company, which is handling the Mississippi River trade, is expanding and making preparations for a greater business.

Chicago. May 8.

(From Our Special Correspondent.)

Anthracite Coal.—Business in anthracite coal has been wholly in small lots. Buying is confined to amounts sufficient for present wants. To date the amount of hard coal brought to Chicago by lake has been small, the reason assigned being excessive freight rates out of Buffalo. The new summer circular prices are out and 25c. more per ton is asked. Prices are, according to this circular, $5 for grate, egg, stove, and $5 25 for chestnut, f. o. b. Chicago.

Bituminous coal continues in larger supply than demand, and accordingly there is little regard shown for any circular prices, though as yet the cutting has not become severe.

Coke is in better supply, and the demand is lessening.

Cleveland. O. May 7.

(From Our Special Correspondent.)

The coal movement on the lakes is very dull just now. The season of navigation opened before the vessel owners thought that it would, consequently many of them were caught without their cargoes aboard. This caused a general rush for the docks and a demand for coal. Not enough was coming, through various hindrances, to meet the demand, and as a consequence the market was weak. The situation has not been entirely cleared up, so that the coal market is still weak. There is a better supply of coal coming now, however, and the shippers are even asking for wild tonnage, whereas they were before working hard to fill contract boats. The shippers had it in their power for two weeks to break the rate at any time, but did not do so, believing, as many others did, that the situation was temporary at best, and if they started to manipulating freights it might end to their detriment; hence they refrained. As a result the owners have no great inclination now to bear the freights when conditions commence to show themselves favorable to their side of the question. The fact that the ore piles are frozen up above and that the shipment of grain is light will also tend to ease up the freights, so that no excessive demands can be made by the owners with impunity.

Pittsburg. May 9.

(From Our Special Correspondent.)

Coal.—All differences between the coal miners and operators in this district have been adjusted, and steady employment is assured for fully 25,000 miners and mine laborers for the balance of the year. The final conference between committees of the two coal combinations and the United Mine Workers resulted in the granting of the terms of the latter organization for an advance of 20% for all outside day workmen. This has been the cause of all the disturbances in the district since the new mining scale went into effect on April 1st. The coal combinations were greatly hampered by the strikes that resulted from the refusal to pay the terms for the outside day hands. The wages they are now required to pay, it is claimed, is above the pay for similar labor elsewhere. Coal for lake shipment will now move forward more rapidly. The supply is abundant and there is not much difficulty in getting sufficient cars to transport it. The Monongahela River Consolidated Coal and Coke Company, the river combination, has been unable to send any coal South for over a week on account of the low stage of water in the rivers. There are plenty of empty coal boats and barges here and a large stock is being accumulated. Over 10,000,000 bus. are loaded and this will be trebled if a rise in the rivers does not come until June. Arrangements have been made by the river combination to ship some of its coal to South African ports from New Orleans. If the export business is found to be profitable it may be engaged in on an extensive scale.

Connellsville Coke.—During the week a number of stories have been circulated regarding the future of the coke industry, the most important being that with the completion of from 2,000 to 3,000 ovens now in course of erection in Southern Fayette County the coke industry in the Connellsville region will be seriously injured. It is stated that the owners of these new ovens are at present consumers of Connellsville coke and will withdraw their patronage when the ovens are completed. This story is denied by coke producers, who say that not more than 1,200 new ovens will be built and that the output from them will go to new furnaces that are now in course of erection. There are probably twelve new furnaces that will soon be consumers of coke and they will easily take all the additional output. The coke production for April in the Connellsville region reached nearly 1,000,000 tons, the output averaging 217,000 tons a week. The production last week was 217,610 tons. The prices still quoted are $4@$4.25 a ton for furnace and $4.25@$4.50 for foundry coke, although it is believed that these rates are shaded in some instances. Consumers who have been able to secure contracts at a lower figure than the price quoted are stocking up. Of the 20,291 ovens in the region, 19,732 are active and 559 are idle. The shipments for the week aggregated 11,561 cars distributed as follows: To Pittsburg and river tipples, 2,825 cars; to points west of Pittsburg, 6,453 cars; to points east of Connellsville, 2,283 cars. This was an increase of 143 cars, compared with the previous week.

SLATE TRADE REVIEW.

New York. May 11th.

Demand continues to improve, and quarry representatives are active. In some quarters roofing slate is not selling in as large quantity as last year, and prices are being shaded.

The shipments from Slatington and Walnutport, Pa. for the four months, ending April 30th, are compiled by us as below; comparison being made with the same time last year:

	1899.			1900.		
	Roofing Squares.	School, cases.	Blackboards, crates.	Roofing Squares.	School, cases.	Blackboards, crates.
January..	13,006	236	1,289	8,692	2,180	1,640
February.	7,979	1,046	940	6,168	1,601	864
March....	10,644	1,527	1,057	10,619	621	849
April.....	19,640	1,043	923	18,118	1,342	543
Totals..	51,269	3,852	4,209	43,597	5,744	3,896

Roofing slate shipments this year show a decrease of 7,672 squares, and blackboards, 313 crates, while school slates record an increase of 1,892 cases.

In export circles there is a lull incident to the ruling high freight rates and increased competition in the foreign market.

The list of prices per square for No. 1 slate, standard brand f. o. b. at quarries in carload lots, is given below:

Size, inches	Monson or Br'ksville.	Bangor.	Bangor Ribbon.	Alb'n, or Jackson Bangor.	Lehigh.	Peach Bottom.	Sea Gr'n.	Unfad'g Green.	Red.
	$	$	$	$	$	$	$	$	$
24 x 14	6.10	3.50	3.00	3.25	3.10	5.10	3.15	.....	.....
24 x 12	6.60	3.50	3.00	3.25	3.10	5.25	3.15	3.75	.....
22 x 12	6.60	3.50	3.25	3.50	3.25	5.25	3.15	3.75	.....
22 x 11	6.50	3.75	3.25	3.50	3.25	5.25	3.15	4.00	.....
20 x 12	6 90	3.75	.....	3 50	3 25	5.25	3.15	3.75	.....
20 x 11	6.80	.....	.....	3.75	3.50	5.25	3.15	....	....
20 x 10	6.80	4.50	3.50	3.75	3.50	5.35	3.15	4 25	11.00
18 x 12	6.80	3 75	.....	3.50	3 25	5.25	3.15	3.50	.....
18 x 11	7.00	....		....	....	....	3.15	3.75	....
18 x 10	7.20	4.50	3.50	3.75	3.50	5.35	3.15	4.00	11.00
18 x 9	7.10	4.50	3.50	3.75	3.50	5.35	3 15	4 25	11.00
16 x 12	6.80	3.75		3.50	3.50	....	2.95	3.50	....
16 x 10	7.10	4.25	3.50	3.75	3.50	5 25	2.95	4.00	11.00
16 x 9	7.00	4.25	....	3.75	....	5.35	2.95	4.25	11.00
16 x 8	7.20	4 50	3.50	3.75	3.10	5.35	2.95	4 25	11.00
14 x 10	6 60	3.75	3.25	3.25	....	5 25	2.85	3.75	11.00
14 x 9	6.50	....	....	.....	....	....	2.85	3 75	11.00
14 x 8	6 60	3.75	3.25	3.25	3.10	5.10	2.85	4.25	11.00
14 x 7	6.40	3.75	3 25	3.25	3.10	5.10	2.60	4.25	11.00
12 x 10	5.80	....	.	....	.....	...	2.60	3.25	....
12 x 9	5.60	.....	.....	....	....	....	2.60	3 25	.....
12 x 8	5.50	3.50	.....	3.00	2.80	4 85	2.60	3.50	9.50
12 x 7	5.00	3.25	.....	3.00	2.80	4.85	2.50	3.50	9 50
12 x 6	4.80	3.25	.	3 00	2.80	4.75	2.50	3 50	9.50

A square of slate is 100 sq. ft. as laid on the roof.

In Brownsville and Monson delivery quotations can be had somewhat lower than above, which is also true of other brands. No. 1 Bangor are 50c. extra when full 3-16 in. Intermediate sea green, $2.35@$2.55; purple, $3.50@$4.25; purple variegated, $2.50@$3.15; red variegated, $6@$8 per square, acording to size.

IRON MARKET REVIEW.

NEW YORK, May 11, 1900.

Pig Iron Production and Furnaces in Blast.

Fuel used	Week ending May 12, 1899.		Week ending May 11, 1900.		From Jan., '99.	From Jan., '00.
	F'ces.	Tons.	F'ces.	Tons.	Tons.	Tons.
An' racite & Coke.	197	246,359	266	288,525	4,424,215	5,380,033
Charcoal.	20	4,925	24	6,250	94,398	137,297
Totals..	217	251,275	290	294,775	4,518,613	5,517,33

The pig iron production, as shown by the statements of the blast furnaces on May 1st, shows an increase of about 4,400 tons weekly. A large part of this gain is due to the blowing in of several large furnaces in the South. There was an increase in stocks unsold during April, but it amounted to 43,500 tons only, or about one day's production at the present rate.

In pig iron and steel billets very little new business is reported. Every one is still waiting to see whether any further break in prices will come. Deliveries under contracts continue, and most large buyers can afford to wait a little, as they are covered up to July 1st, if not longer.

Finished iron and steel are also very quiet, and little new business is reported, except in structural material, in which a good deal of business has been done, with more in sight.

Export inquiries are on the increase. Pig iron is called for, and there are also some large contracts for rails, the latter generally asking for early deliveries. We are informed that some contracts for pig iron for England have been closed, deliveries to run into 1901, at prices only 2s. per ton below the current quotation.

Birmingham, Ala. May 7.

(From Our Special Correspondent.)

The feature of the pig iron market the past week has been inquiry from foreign buyers. It is stated that the prices offered are but a selling agent's commission less than the prices which prevail in this country. Shipments keep brisk, and furnacemen announce that they are selling much iron in the domestic market. Representatives of the larger companies admit that their smaller competitors are making some concessions, but as far as their own business goes they are making none of importance.

Nothing definite is given out as to the export iron sold, but reports have it that no less than 130,000 tons have been sold recently, the shipments to occur between now and the first of next year. Some big orders from Glasgow are said to have been given the furnace companies.

While many inquiries are received anticipating concessions in quotations, the market as a whole seems to be firm. The quotations published show some change, a reduction of about 50c. on the ton, as compared to the quotations of last month, but small buyers who have been forced to go into the market for immediate delivery iron are compelled to pay the prices which have ruled for 8 or 10 months. There is a scarcity of some grades again reported, and delivery is not assured with such promptness as some purchasers desire. The following are the quotations given: No. 1 foundry, $17.50@$18; No. 2, $16.50@$17; No. 3, $16@$16.50; No. 4, $15.50@$16; gray forge, $15.50; No. 1 soft, $17.50@$18; No. 2, 16.50@$17.

The production of the 6 open-hearth furnaces at the steel plant at Ensley is now 300 tons every 12 hours, and work is being done on the remaining 4 furnaces. The steel wire, rod and nail mill will be in full blast by the end of May.

Buffalo. May 10.

(Special Report of Rogers, Brown & Co.)

What practically amounts to a cessation of business is the condition of the pig iron trade in this locality at the present time. A small demand for car-load lots, emanating from those who are not in the habit of carrying stock on hand, is all that is doing, and there are evidences that work in the shops is dropping off. The widespread labor disputes, coupled with uncertainty in regard to price of materials, has checked building operations and is curtailing consumption in this important branch. Buyers are proceeding with such caution that nothing is having attention unless urgent. It is difficult to say what influence will occasion the change to a condition of things normal to this season, it having been demonstrated that a lowering of prices is without effect. We quote below prices which are nominally the market, on the cash basis f. o. b. cars Buffalo: No. 1 strong foundry coke iron, Lake Superior ore, $23; No. 2, $22.50; Ohio strong softener No. 1, $23.50; No. 2, $23; Southern soft No. 1, $23.50; No. 2, $22.50; Lake Superior charcoal, $26; coke malleable, $22.50.

Chicago. May 8.

(From Our Special Correspondent.)

Pig Iron.—Uncertainty as to market conditions and prices has prevented much business being transacted in this market. Consumers are waiting the outcome before buying to any extent. There has been no reduction in prices at this point worthy of notice, and sellers declare that there yet continues a scarcity in high grade iron, and shipments on old contracts are being pushed, because the smelters are constantly demanding iron. Prices are as follows: Lake Superior charcoal, $25.50@$26; local coke foundry No. 1, $23@$23.50; No. 2, $22.50@$23; No. 3, $22@$22.50; local Scotch No. 1, $23@$23.50; Ohio strong softeners No. 1, $24@$24.50; Southern silvery, $25.50@$27; Southern coke No. 1, $22.35@$22.85; No. 2, $21.35@$22.85; No. 3, $20.35@$20.85; Southern No. 1 soft, $22.35@$22.85; No. 2, $21.35@$22.35; Alabama car wheel, $24.75@$25; malleable Bessemer, $24.

Cleveland, O. May 7.

(From Our Special Correspondent.)

Iron Ore.—The iron ore market is very quiet, as it has been since the opening of the season of navigation. The transportation of this commodity is being done entirely by contract boats, no wild tonnage being placed at any port. During the middle of last week one boat was placed out of Escanaba at 80c., which was a reduction of 10c., but it was not followed by others. The outlook is that soon the transportation will be given an added impetus by the ore piles thawing out and wild rates will be established. Escanaba will likely start at 80c., with Marquette at $1 and Duluth at $1.25. Duluth alone may stay on the contract rate. While the market is dull, it is unsteady, owing to the fact that Rockefeller holds tonnage with a capacity of 2,000,000 tons and better, which he has not allotted to any particular line, and which may materially affect the general freight conditions on the lakes.

Pig Iron.—The shipments now are all on order. Consumers are taking up the product as fast as it comes out of the furnaces, but this is all order business; but few if any sales having been made. Buyers have been backward of late. Within the last week a few inquiries have been made, which would indicate a little stronger feeling, but it is not extensive. The prices remain as they have been, $22.50 for No. foundry and $22 for No. 2 foundry.

Finished Material.—The situation has hardly changed in a week. The buyers were looking around a little this week, but have placed no orders, simply making inquiries. This is taken as more hopeful. There has been some talk of a reduction in the price of structural iron, although the conditions do not bear out the report. Beams and channels are still bringing 2.25c., and it is hardly believed that any material change will be seen soon. Angles are firm at the same price for 3-in. and 6-in. sizes. Business is not as brisk in the Mahoning mills as it was a year ago. Whereas they were then running 6 days in a week, with a full quota of men, some of them are now running but 3 days out of the week, and are not rushed at that. Some few plants are shut down entirely.

Scrap Iron.—This shows the only material slump in the whole market, probably because more business was done. Whereas the first of the year no old rails were to be secured, and the price was high, they seem to have become almost a glut on the market, with no demand and prices down considerably. Small sales of old rails made recently were on the basis of $19@$20. Old car wheels joined in the break, and were selling at $22, while wrought scrap is selling at $18. This is a general indication of the trend of the market.

Philadelphia. May 10.

(From Our Special Correspondent.)

Pig Iron.—Sales since Monday foot up less than any three days since the boom began. Prices are difficult to quote. Rumors are generally disquieting. There is a poor show for selling most of this month. What applies to pig-iron applies, though with a little less force, to everything else on the list except structural material and steel rails. No. 1-x foundry is supposed to be worth $23; No. 2-x would sell if there were some giving way by makers to $21; gray forge is reported under $18 for good brands, but those who have to sell equivocate when pressed to affirm or deny offering iron at exceptionally low prices. Bessemer and basic iron quotations are simply reflections of Pittsburg markets.

Billets.—Billets are dull, and buyers await developments West. Large sales for delivery, after July 1st, could be made now if about $32 as an outside figure were named.

Bars.—Reports are dissimilar and there are too many conflicting rumors to reach a definite statement. There has been no further known drop below 1.85 for refined, but it is said business is likely to go through at 1.75. At the mills the position is sound.

Nails.—Building operations are backward, and the nail trade does not show up well even at the drop.

Pipes & Tubes.—Independent concerns are picking up more business, being able to offer less rigid terms.

Sheets.—The new rates of 2% off at 10 days will suit all. No business is to be done with brokers or commission houses. The prospects are that the competition of independent concerns will soon be felt.

Plates.—It is no easy matter to get at the exact status of plates, because so much business has been done for forward delivery. Prices are edging downward—that is certain, but there is not so much room to slide as in other branches.

Structural Material.—The mills are all in good shape as to business. No change in prices is contemplated it is said, and the amount of work that has come in sight since the combination was effected, is very gratifying to the Philadelphia representatives.

Steel Rails.—Inquiries are on the increase. The Maryland Steel Company has booked an order for 1,000 tons, besides a lot of track material, for June shipment, to Japan. There are inquiries under consideration for 30,000 tons for export, but the trouble is, too early deliveries are demanded.

Old Rails.—Old iron are quoted at $22.50; old steel rails at $21@$22.

Scrap.—Choice railroad, $23; Heavy Steel, $20@$21; No. 1 yard scrap, $18@$19. The yards are pretty clean of supplies, and consumers are still anxious to secure all that it is possible to be had.

Pittsburg. May 9.

(From Our Special Correspondent.)

The iron and steel market in this section continues in an unsettled and unsatisfactory condition. Confidence has not yet been restored

and buyers are holding off in an evident effort to batter down prices. The absence of demand in some lines has had the effect of weakening prices to a certain extent. Business in Bessemer pig iron is at a standstill and no sales are recorded for the week. This has not resulted in any change in prices and it will be a surprise if anything is done at less than $24, Valley, before the fourth quarter. Furnacemen look for a revival of the demand before long. The condition of the foundry iron market is peculiar and continues to get weaker, owing to a falling off in the demand, while the foundrymen appear to be doing as much business as ever. Only small lots are being sold and during the week prices have dropped. Prices for gray forge remain unchanged and one large sale was made this week. The demand for structural steel and steel rails is as strong as ever and prices are firm, efforts of buyers to secure lower rates being unsuccessful. Building operations received a temporary check on account of the strikes of tinners and bricklayers. Both were soon ended, contractors conceding the workers' demands for an increase in wages, the former receiving about 30c. and the latter 45c. a day. There is a strong feeling among members of the Amalgamated Association of Iron, Steel and Tin Workers to enforce a shut-down of the union mills during the months of July and August. The annual convention will begin in Indianapolis on Tuesday, May 15th, and if this action is decided upon, and there is a certainty of a shut-down of the union mills of the country, a heavy demand for iron and steel products is almost sure to follow, which will undoubtedly stimulate prices. The wage committee of the Amalgamated Association will meet in this city to-morrow to prepare a new scale for the year beginning on July 1st, which will be submitted to the convention for adoption. It is known that some important changes are to be demanded in addition to higher wages.

Pig Iron.—No sales of Bessemer were made this week and prices remain at $24, Valley, and $24.90, Pittsburg. Foundry iron has taken another drop and is weaker. No. 2 is quoted at $21.50, a decline of 50c. Gray forge is still quoted at $20 and a sale of 2,000 tons at that figure is recorded this week.

Steel.—There is but little doing in Bessemer steel billets and prices have fallen 50c. a ton, the quotation this week being $30.50. Openhearth billets remain unchanged. The demand for structural steel is keeping up and prices are the same as last week. Tank plates are still quoted at 1.70c. It is reported that a large steel concern made a contract this week for 20,000 tons at a lower figure.

Sheets.—The American Steel Sheet Company has not yet scheduled any quotations for sheets, but sales made during the week indicate a price of 3.20c. for No. 27 gauge and 3.30c. for No. 28. The discounts on galvanized are 70 and 10%, with the usual 15c. freight allowance.

Ferro-manganese.—There is no change in prices, $125 being quoted for small lots and a lower price for a big order.

By Telegraph.

(From Our Special Correspondent.)

Pittsburg, May 10th.—A further drop has occurred in steel billets, which were reduced from $30.50 to $29 at Pittsburg this morning.

New York. May 11.

Consumers of pig and of some finished products continue to hold off and few contracts into the third quarter of the year are noted. In foreign trade there promises to be considerable activity. We note shipments to Japan of $40,000 worth of railroad supplies, $19,000 worth of bridge material and $13,000 worth of iron pipe. The shipments of machine tools to Germany, France and England continue.

Pig Iron.—The prices for No. 1 and No. 2 foundry are very firm. If there is weakness it is in the cheapest grades. Some large export sales are reported. We quote for tidewater delivery: No. IX foundry, $23@$23.50; No. 2, $21.50@$22; No. 2 plain, $20.50@$21; Southern brands, New York delivery: No. 1 foundry, $22.50@$23; No. 2 foundry, $21.25@$22; No. 1 soft, $22.50@$23; No. 2 soft, $21.25@$22; No. 3 foundry, $21.25@$21.50.

Bar Iron.—Quotations continue nominally 2@2.05c. for large lots of common on dock; refined bars 2.10c.; but these figures are shaded.

Plates.—The market is still weak. We quote for large lots at tidewater: Tank, ¼-in. and heavier, 1.90@2c.; tank, 3-16 in., 2.05@2.10c.; shell, 2.15c.; flange, 2.25c.; marine, 2.35c.; firebox, 2.50c.; universals, 2.10c. Some pretty low quotations are reported, but we know of no sales at the lowest figures.

Steel Rails and Rail Fastenings.—There is opportunity to dispose of 30,000 tons abroad. Some fair-sized sales to domestic buyers have occurred during the week. We quote for standard sections, $35 f. o. b. Eastern mills. Smaller rails are quoted: 12-lb., $40; 16-lb., $40; 20-lb., $40; 30-lb. to 40-lb., $38; 40-lb. to standard, $36, with the usual advance for small orders. We quote angle bars, 2.30c.; fish plates, 2.30c.; spikes, 2.70c.

Structural Material.—A large office building and extensions to the Manhattan Railway have taken a considerable tonnage. The market is firm. We quote in large lots at tidewater: Beams, 2.40@2.45c.; channels, 2.40@2.45c.; angles, 2.40c.; tees, 2.40c.

Nails.—There is a fair demand. Cut nails in carload lots on dock are $2.55; wire nails, $2.25.

METAL MARKET.

NEW YORK, May 11.

Gold and Silver.

Gold and Silver Exports and Imports
At all United States ports in March and year.

Metal.	March.		Year.	
	1899.	1900.	1899.	1900.
GOLD.				
Exports	$1,109,845	$1,064,350	$3,433,258	$8,159,298
Imports	3,187,575	1,921,036	14,728,825	5,808,536
Excess	I. $2,077,730	I. $ 856,686	I. $11,295,567	E. $2,350,762
SILVER.				
Exports	5,057,653	5,452,422	14,757,533	15,006,265
Imports	3,125,859	3,149,146	7,681,738	8,065,576
Excess	E. $1,931,794	E. $2,303,276	E. $7,075,795	E. $6,940,689

This statement includes the exports and imports at all United States ports, the figures being furnished by the Treasury Department.

Gold and Silver Exports and Imports, New York
For the week ending May 10th, 1900, and for years from January 1st, 1900, 1899, 1898, 1897.

Period.	Gold.		Silver.		Total Excess, Exp. or Imp.
	Exports.	Imports.	Exports.	Imports.	
We'k	$2,903,208	$11,646	$860,115	$56,247 E.	$3,695,430
1900..	9,689,608	1,328,194	13,914,469	1,641,039 E.	20,634,824
1899..	2,101,743	5,613,311	9,784,541	1,027,532 E.	5,245,441
1898..	4,426,939	64,464,897	13,065,963	1,622,093 I.	48,594,088
1897..	7,162,387	1,442,103	15,176,228	839,391 E.	20,057,111

Exports of gold were chiefly to France; imports were from the West Indies. The silver exported went chiefly to London; that imported was from Mexico.

The United States Assay Office in New York reports the total receipts of silver at 86,000 oz. for the week. Total since January 1st, 1,923,000 oz.

Average Prices of Silver per oz. Troy.

Month.	1900.		1899.		1898.	
	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.	Lond'n Pence.	N. Y. Cents.
January...	27.30	59.30	27.42	59.36	26.29	56.77
February..	27.49	59 76	27.44	59.42	25.89	56 07
March.....	27.59	59.81	27.48	59.64	25.47	54.90
April.....	27.41	59.59	27.65	60.10	25.95	56.02
May.....	.....	.....	28.15	61.23	26 31	56.98
June.....	.....	.....	27 77	60.43	27.04	58.61
July.....	.....	.....	27.71	60 26	27.32	59.06
August....	.....	.....	27.62	60.00	27 48	59.54
September	.....	.....	27.15	58.89	28.05	60.68
October ..	.....	.....	26.70	57.98	27.90	60.42
November	.....	.....	27 02	58.67	27.93	60.60
December.	.....	.....	27.21	58.99	27.45	59.42
Year.....	.....	.....	27.44	59 58	2.76	58.26

The New York prices are per fine ounce; the London quotation is per standard ounce, .925 fine.

Average Prices of Metals per lb., New York

Month.	COPPER.		TIN.		LEAD.		SPELTER	
	1900.	1899.	1900.	1899.	1900.	1899.	1900.	1899.
Jan	15.58	14.26	27.07	22.48	4.68	4.18	4.65	5.34
Feb.....	15.78	17.02	30.58	24 20	4.675	4.49	4.64	6.28
March...	16.29	16.35	32.90	23.82	4.675	4.37	4.60	6.31
April....	16.76	17.13	30.90	24.98	4.675	4.31	4.71	6.67
May.....	.....	17.20	.....	25.76	.....	4.44	.....	6.88
June.....	.....	16 89	.....	25.85	.....	4.43	.....	5.98
July.....	.....	17 10	.....	29.63	.....	4.52	.....	5.82
August..	.....	17.42	.....	31.53	.....	4.57	.....	5.65
Sept.....	.....	17 34	.....	32 74	.....	4.58	.....	5.50
October..	.....	16.94	.....	31.99	.....	4.575	.....	5.32
Nov.....	.....	16.49	.....	28.51	.....	4.575	.....	4.64
Dec.....	.....	15.85	.....	25.88	.....	4.64	.....	4.66
Year.....	.....	16.67	.....	25.12	.....	4.47	.....	5.75

Commencing with March 17th, the prices given in the table for copper are the averages for electrolytic copper; this is the case for both 1899 and 1900. The average price for Lake copper for the year 1899 was 17.61c. For January, 1900, the average price of Lake copper was 16.33c.; for February, 16.08c.; for March, 16.55c.; for April, 16.94c.

Prices of Foreign Coins.

	Bid.	Asked
Mexican dollars.....	$ .47¾	$ .49
Peruvian soles and Chilean pesos.....	.44	.46
Victoria sovereigns.....	4.86	4.88
Twenty francs.....	3.86	3.90
Twenty marks	4.75	4.88
Spanish 25 pesetas	4.78	4.82

Financial Notes of the Week.

Gold shipments reported so far, for this week, amount to $2,850,000, making a total of about $6,000,000 since the present movement began. It is quite probable that more will go, as the interest rates in London and Berlin make loans there profitable. There is also, it must be remembered, a lot of money to be sent abroad this year to meet letters of credit issued to travelers—enough to make a large item in the shipments.

The silver market has been very steady at the decline this week upon completion of English

Imports and Exports of Metals.

Port.	Week, May 9.		Year 1900.	
	Expts.	Impts.	Expts.	Impts.
***New York.**				
Aluminum.....long tons	20	.....	62	33
Antimony ore... " "	.....	**175	.....	1,164
" regulus.. " "	.....	**68	.....	465
Chrome ore..... " "	.....	.....	.....	151
Copper, fine ..... " "	1,6'5	249	38,863	8,616
" matte.. " "	255	.....	1,244	.....
" ore..... " "	.....	.....	.....	640
" ash..... " "	.....	.....	.....	41
Ferro-Chrome .. " "	.....	.....	.....	10
Ferro-mangan'se " "	.....	.....	.....	152
Iron ore ..... " "	.....	.....	.....	7,874
" pig, bar, rod " "	233	.....	2.885	1,573
" pipe..... " "	1,301	.....	5,909	124
" plates, sheets " "	270	.....	772	43
Lead..... " "	513	600	30,779	30,906
" ore.. ..... " "	.....	.....	.....	7,300
" dross..... " "	.....	.....	.....	24
Manganese, ore. " "	.....	.....	.....	4,584
Metals, old, scrap " "	238	**103	1,439	3,861
Composition... " "	.....	.....	906	.....
Nails..... " "	618	.....	16,654	.....
Nickel " "	85	.....	809	55
" ore, matte " "	.....	.....	.....	2,821
§Railr'd material " "	.....	**125	495	1,742
Rails, old..... " "	.....	.....	206	518
Spiegeleisen.... " "	.....	.....	.....	1,300
Steel bars, plates " "	529	**448	3,614	8,473
" rails..... " "	59	.....	17.491	18
" wire..... " "	477	.....	7,187	.....
" not speci'd. " "	94	**71	3,019	1,210
Tin " "	.....	565	3	10,146
" dross or ashes " "	.....	.....	.....	.....
" and black plates " "	.....	1671	.....	12,486
Zinc..... " "	.....	50	22	138
" dross..... " "	.....	.....	311	50
" ashes, skim " "	22	.....	488	20
" ore..... " "	14	.....	6,064	.....
†Baltimore.				
Chrome ore.....long tons	....	.....	....	2,930
Copper, fine..... " "	270	.....	17,006	1,703
" matte... " "	.....	.....	.....	.....
Ferro-manganese " "	.....	.....	.....	155
Iron pig, bar. etc. " "	156	3,729	1,492	15,618
" ore..... " "	.....	13,676	.....	192,198
" pyrites..... " "	.....	.....	.....	18.489
Manganese ore.. " "	.....	.....	.....	76,047
Metals, old & Rails " "	.....	.....	384	.....
Nails ..... " "	.....	.....	1,175	.....
Pipe, iron & steel " "	52	.....	1,935	.....
Silicon ..... " "	.....	.....	.....	85
Spiegeleisen..... " "	....	103	.....	659
Steel, bars, etc.. " "	127	.....	984	1,388
" wire ..... " "	.....	.....	611	73
" rails..... " "	.....	.....	35,521	.....
Tin..... " "	.....	.....	.....	67
" and blackplates" "	.....	48	.....	1,416
***Philadelphia.**				
Antimony ...long tons	.....	.....	.....	5
Chrome ore... " "	.....	1100	.....	300
Copper, fine..... " "	.....	.....	1,417	.....
" ore..... " "	.....	13,820	.....	10,692
Iron, pig..... " "	....	.....	.....	.....
" ore..... " "	.....	13,400	.....	12,504
" pyrites..... " "	.....	.....	.....	87,455
Manganese ore.. " "	.....	.....	.....	34,234
Spiegeleisen..... " "	.....	1260	.....	3,760
Tin..... " "	.....	50	.....	193
" and black plates" "	.....	.....	.....	1,557
Zinc ore..... " "	.....	.....	1,500	.....

Total United States.§§

Articles.	March, 1900.		Year, 1900.	
	Expts.	Impts.	Expts.	Impts.
Antimony..... long tons	....	34	.....	531
" ore.... " "	...	382	.....	730
Copper fine . " "	17,607	2,829	45,311	10,033
" ore & matte " "	1,081	833	2,161	4,103
Iron, pig & bar.. " "	9,425	6,697	28,979	22,645
" ore..... " "	120	95,215	120	276,236
Iron& steel plates " "	3,311	606	7.514	4,003
Iron & steel rails " "	32,808	1	67,329	288
" " wire " "	8,130	194	19,736	453
Lead, pigs, bars & old ..... " "	2a1	591	280	603
Lead in ore, etc. " "	6,723	7,269	21,583	20,155
Manganese ore and oxide..... " "	..	80,056	.....	135,418
Nickel " &matte " "	277	.....	575	.....
Nails, cut..... " "	939	.....	2,291	.....
" wire ..... " "	3,848	.....	12,322	.....
Quicksilver..... " "	37	.....	144	.....
Steel, billets, rods, etc..... " "	4,771	3,502	11,232	10,552
Tin..... " "	34	3,292	54	8,117
" &black plates " "	19	4,502	40	14,932
Zinc ..... " "	2,807	115	5,170	358
" ore..... " "	6,141	.....	10,408	.....

*New York Metal Exchange returns. †By our Special Correspondent. ‡Not specified. **Week ending May 1st. §§ Monthly returns, Treasury Department. ‖ Week May 4th. Exports include domestic and foreign metals.

Import Duties on Metals.

The duties on metals under the present tariff law are as follows: Antimony, metal or regulus, ¾c. a lb. Lead, 1¼c. a lb. on lead in ores; 2½c. per lb. on pigs, bars, etc.; 2½c. on sheet, pipe and manufactured forms. Nickel, 6c. per lb. Quicksilver, 7c. per lb. Spelter or zinc, 1½c. per lb. on pigs and bars, 2c. on sheets, etc. Copper, tin and platinum are free of duty.

Mint orders. There appears to be a fair demand for India, both spot and forward.

The statement of the United States Treasury on Wednesday, May 9th, shows balances in excess of outstanding certificates as below, comparison being made with the statement of the corresponding day last week:

	May 2.	May 9.	Changes.
Gold	$79,461,961	$77,061,920	D $2,400,041
Silver	8,807 839	8,977,188	I 169,349
Legal tenders	12,588,668	13,422,692	I 834,124
Treas. notes, etc.	837,941	708,800	D 129,141
Totals	$101,696,309	$100,170,600	D $1,525,709

Treasury deposits with national banks amounted to $115,006,278, an increase of $4,120,102 for the week.

The statement of the New York banks—including the 63 banks represented in the Clearing House—for the week ending May 5th, gives the following totals, comparison being made with the corresponding weeks in 1899 and 1898:

	1898.	1899.	1900.
Loans and discounts.	$571,085 200	$776,702,600	$787,770,000
Deposits	659,616 900	899,625,400	869,155,300
Circulation	14,568,600	13,883 200	21,218,100
Reserve:			
Specie	159,791,500	188 438,700	165,479,800
Legal tenders	49,029,200	552,819,600	67,787,500
Total reserve	$208,820,700	$244,258,300	$233,267,300
Legal requirements.	164,904,225	221,906,350	217,288,825
Balance, surplus	$43,916,475	$19,351,950	$15,978,475

Changes for the week, this year, were increases of $13,221,400 in loans and discounts; $17,092,800 in deposits, $89,800 in circulation, $2,010,900 in specie and $1,166,500 in legal tenders; a decrease of $1,095,800 in surplus reserve.

The following table shows the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding date last year.

	1899.		1900.	
Banks.	Gold.	Silver.	Gold.	Silver.
N.Y. Ass'd.	$188,438,700	.....	$165,479,800	.....
England	152,090,540	.....	161,682,560	.....
France	364,414,475	$240,183,190	389,257,430	$227,651,185
Germany	145,440,000	74,920,000	132,120,000	68,065,000
Spain	58,270,000	63,640,000	68,445,000	79,025,000
Aus.-Hun.	150,210,000	52,480,000	188 080,000	47,315,000
Neth'l'ds	19,170,000	34,270,000	24,335 000	29,850,000
Belgium	14,810,000	7,405,000	14,165,000	7,085,000
Italy	77,405,000	13,790,000	77,210,000	8,205,000
Russia	485,615,000	25,115,000	414,470,000	35,060,000

The returns of the Associated Banks of New York are of date May 5th and the others are of date May 3rd, as reported by the "Commercial and Financial Chronicle" cable. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports gold only.

Shipments of silver from London to the East for the year up to April 26th, 1900, are reported by Messrs. Pixley & Abell's circular as follows:

	1899.	1900.	Changes.
India	£1,468,300	£1,555,160	I. £86,860
China	475,338	138,460	D. 336,878
The Straits	24,907	81,990	I. 57,083
Totals	£1,968,545	£1,775,610	D. £192,935

Arrivals for the week, this year, were £88,000 in bar silver from New York, £20,000 from Australasia, and £4,000, from the West Indies; total, £112,000. Shipments were £5,000 in bar silver to Calcutta.

Indian Exchange has been steady at 15.97d. per rupee, but the demand for Council bills has been light, and only 30 lakhs were sold last week.

The money in the United States, on May 1st, is estimated by the Treasury Department as below:

Kind.	Total.	In treasury.	Circulation.
Gold coin (including bullion in Treasury)	$1,043,525,117	$229,461,962	$616,535,746
Gold certificates	.....	.....	197,527,409
Silver dollars	484,335,453	8,807,839	68,333,834
Silver certificates	.....	.....	407,193,810
Subsidiary silver	80,512,991	5,512,174	75,000,817
Treas. notes of 1890	82,629,000	837,941	81,791,059
U. S. notes	346,681,016	12,588,568	326,832,448
Currency certificates	.....	.....	7,260,000
Nat. Bank notes	285,359,306	5,309,026	280,050,340
Total	$2,323,042,973	$262,517,510	$2,060,525,463

The average circulation per capita is estimated at $26.58. For redemption of outstanding certificates an exact equivalent in amount of the appropriate kinds of money is held in the Treasury, and is not included in the account of money held as assets of the Government. The statement of money held in the Treasury as assets of the Government does not include deposits of public money in National Bank Depositaries to the credit of the Treasurer of the United States, and amounting to $104,975,784. The amount in circulation shows an increase of $39,250,957 over April 1st, 1900; and an increase of $126,657,571 over May 1st, 1899.

Other Metals.

Daily Prices of Metals in New York.

May.	Sterling Exchange.	Silver. Fine oz. Cts.	Silver. London, Pence.	Copper. Lake, cts. ₱ lb.	Copper. Electrolytic ₱ lb.	Copper. London, £ ₱ ton	Tin, cts. ₱ lb.	Lead, cts. ₱ lb.	Spelter. N.Y. cts. ₱ lb.	Spelter. St. L. cts. ₱ lb.
5	4.88	60	27⅛	16¾ @ 17	16⅝	.....	29¾	4.65 @4.70	4.55	4.45
7	4.88½	59⅞	27⅛	16¾ @16⅞	16⅝	75⅝	29¾	4.35 @4.40	4.55	4.45
8	4.88	59⅞	27½	16¾	16¼ @16⅝	75¼	29½	4.35 @4.40	4.55	4.45
9	4.88	59⅞	27½	16¾	16¼ @16⅝	74⅜	29½	4.35 @4.40	4.55	4.45
10	4.88	59⅞	27½	16¾	16¼ @16⅜	74¼	29	4.20 @4.25	4.55	4.45
11	4.88½	60	27⅜	16¾	16½	74¾	29	4.15 @4.20	4.55	4.45

London quotations are per long ton (2,240 lbs.) standard copper, which is now the equivalent of the former g. m. b's. The New York quotations for electrolytic copper are for cakes, ingots or wirebars; the price of electrolytic cathodes is usually 0.25c. lower than these figures.

Copper.—The market continues very dull and we learn of but few transactions. However, little pressure to sell appears to have developed, no doubt owing to the fact that producers are well sold for the next few months. Prices are again a shade lower, and we quote Lake 16¾c.; electrolytic in cakes, wirebars and ingots, 16½@16⅝c.; in cathodes, 16¼@16⅜c.; casting copper, 16½c.

In the London market a still further decline in standard copper has taken place. It closed last week at £75 5s. for spot, £74 2s. 6d. for three months, and while it fluctuated but little at the beginning of this week, it declined on Wednesday to £74 7s. 6d. for spot, £74 for three months, and on Thursday to £74 5s. for spot, £73 15s. for three months. It closes at £74 15s. for spot, £74 5s. for three months.

Refined and manufactured sorts we quote: English tough, £78@£79; best selected, £79@£80; India sheets, £83@£83 10s.; strong sheets, £86@£86 10s.; yellow metal, 7⅛@7¼d.

Tin.—The market has been very quiet and weakish. Consumers, generally, appear to be well covered and with rather large quantities in this country for sale, prices have suffered, and ruled below the figures at which the metal could be imported. While business was done the beginning of the week at 29¾c., we quote the market 29c. at the close.

In London, the market, which closed last week at £135 10s. for spot, £135 2s. 6d. for three months, it opened at £135 10s. for spot, but with three months offered at £135. It fluctuated within narrow limits the beginning of the week, but on Wednesday a decline of £1 occurred and on Thursday the market declined further, spot being quoted at £133 15s. and three months at £133 5s. At the close the quotations are cabled at £133 5s. for spot, £132 17s. 6d. for three months.

Lead.—A quite unexpected reduction in the price of lead was this week established. At the beginning of the week the American Smelting & Refining Company reduced its price 30c. per 100 lbs., and on Thursday a further reduction of 15c. per 100 lbs. was made. Lead in New York is now quoted at 4.20@4.25c., in St. Louis at 4.15@4.17½c. To-day a further reduction is noted, bringing the price down to 4.15@4.20c., New York.

Our cables from London report a very strong market and a scarcity of lead for early deliveries. Large transactions both for prompt and future shipments are advised. The quotations are higher, that for Spanish lead being £17@£17 2s. 6d., and for English £17 2s. 6d.@£17 5s.

St. Louis Lead Market.—The John Wahl Commission Company telegraphs us as follows: Lead is demoralized, and largely lower. The price of Missouri is 4.15c., and desilverized, 4.20c.

Spelter.—The market is quiet and we do not learn of many transactions. Prices remain unchanged, the metal being quoted 4.55c. New York, 4.45@4.50c. St. Louis.

The European market is somewhat better, the quotation for good ordinaries being cabled as £21 17s. 6d. and that for specials 5s. higher.

Antimony.—We quote Cookson's 10½c.; Hallett's, 9¾c.; U. S. Star, 9½@9⅝c.

Imports of metallic antimony and regulus into the United States for the three months ending March 31st were 531 long tons, against 306 tons in 1899. Imports of antimony ores were 730 long tons, against 419 tons last year.

Nickel.—The price of this article continues 45@50c., according to size of order.

Platinum.—Consumption has increased and prices are higher. For ingot platinum in large quantities $18.20 per Troy oz. is quoted in New York.

Chemical ware (crucibles and dishes), best hammered metal, from store in large quantities, is worth 70½c. per gram.

Quicksilver.—The New York quotation is unchanged at $51 per flask for large lots; for small orders $52.50@$54 is asked. San Francisco quotations are $51.50 for local deliveries, and $46.50@$47 for export.

The London price is £9 10s. per flask, with the same figure quoted from second hands.

Minor Metals and Alloys.—Wholesale prices, f. o. b. works, are as below:

	Per lb.		Per lb.
Aluminum.			
No. 1, 99% ingots	33@37c.	Ferro Titanium (20%)	$1.00
No. 2, 90% ingots	31@34c.	Ferro tungsten (37%)	35c.
Rolled sheets	42c. up	Magnesium	$2.75@$3
Alum.-bronze	20@23c.	Manganese (over 99%)	$1.05
Nickel-alum	33@39c.	Mangan'e Cop (30% Mn)	32c.
Bismuth	$1.60	Mangan's Cop (30% Mn)	38c.
Chromium (over 99%)	1.00	Molybdenum (Best)	$1.45
Copper red oxide	60c.	Phosphorus	45@50c.
Ferro-Molyb'um (50%)	$1.05	Tungsten (Best)	95c.
Ferro-Titanium (10%)	90c.		

Variations in price depend chiefly on the size of the order.

LATE NEWS.

Among the arrivals in New York from Liverpool this week were several members of a commission who have come to this country to inspect American armor-plate factories, in the interest, it is said, of a syndicate of English capitalists, who are to build a large armor-plate manufactory on the banks of the Tees. The commission consists of the general manager of the Weardale Steel Company, the general manager of the South Durham Steel Company, Mr. T. Westgarth, managing director of Furness, Westgarth & Co., Mr. Stephen Furness, nephew of Sir Christopher Furness, and three experts, who are to report the result of their inquiries by the end of June.

The annual meeting of the Union Copper Mining Company was held at East Orange, N. J., May 10th. Walter G. Newman resigned as president and member of board of directors, though it is stated that he retains an interest in the company. The following directors were elected: Calvin H. Allen, Thomas C. Buck, Temple Taylor Berdan, Vernon C. Brown and W. M. Butler, Authority was given to increase the members of the board to nine. Later the four following additional directors were elected: John L. Drummond, Robert P. Doremus, Jacob Field and Andrew Fletcher, Jr. Officers were elected as follows: C. H. Allen, president; Thomas C. Buck, treasurer, and T. Berdan, secretary. The executive committee consists of Messrs. Allen, Buck, and Brown. It was stated that during the past year $556,696 had been spent in betterments, and that cash and ore on hand amounted to $220,000. The total indebtedness of the company was given at less than $15,000.

At a meeting of the directors of the American Steel and Wire Company, held May 10th, it was announced that resignations had been tendered by and accepted from John Lambert, president of the company, John W. Gates, chairman of the board of directors, and Isaac L. Ellwood, chairman of the executive committee. All of these, however, continue as members of the board of directors. The positions were filled by the following elections: President, Wm. P. Palmer; chairman of the board of directors, A. Clifford, formerly treasurer of the company; chairman of the executive committee, William Edenborn; treasurer, F. L. Watson. The board of directors filled the vacancies created by the recent resignations of Henry Seligman and Frederick Strauss by electing in their places Randall Morgan of Philadelphia, vice-president of the United Gas Improvement Company, and Herman Sielcken, of W. H. Crossman & Brother, New York. In addition to the resignations above stated it was determined that a change in the executive committee should be had, so as to increase its number to seven, the cimmittee to consist of six directors and the president as ex-officio member. The executive committee, as now constituted, consists of Wm. Edenborn, chairman; I. L. Ellwood, John W. Gates, John Lambert, A. Clifford and Thomas Dolan. It has been further determined that the board of directors of the company will meet hereafter monthly; these meetings will probably be held in New York City.

(From Our Special Correspondent.)

Salt Lake City, Utah May 10th.—Governor Wells has received this dispatch from State Mine Inspector Gomer Thomas, dated at Scofield: Scofield: "Total number of men killed at Winter Quarters mine explosion 199. In all 195 bodies have been taken out and four bodies are still in the mine. Injured, 7. Total killed and injured, 206. A total of 104 men came out alive. A constant force of men is still in search of those missing. I have not made any decision as to the cause of the explosion. My time has been occupied in exploring for the missing."

This is the lowest statement of the fatalities given out, and it ought to be official and correct. Three days after the catastrophe it was given out that the number of bodies recovered was 227 and there were supposed to be from 30 to 50 more. It is to be hoped the smallest number includes all.

CHEMICALS AND MINERALS.

(For further prices of chemicals, minerals and rare elements, see page 580.)

New York. May 11.

Heavy Chemicals.—Next fire alkali orders are being taken at quotations below, while the few prompt delivery orders are being filled at 5c. more per 100 lbs., f. o. b. works. Foreign alkali is selling on spot at 90@92½c. per 100 lbs., while July-December shipments are satisfied at 85@87½. Domestic caustic soda, high test, for immediate shipment, sold at $2@$2.10 per 100 lbs., f. o. b. works, while future deliveries, including 1901, are being booked in a good way at quotations below. Bicarb. soda shows a large business, both home and export consumption. Chlorate of potash is quiet. Bleaching powder is easier, owing to large arrivals. We quote per 100 lbs., as below:

Articles.	Domestic.		Foreign.
	F.o.b. Works.	In New York.	In New York.
Alkali, 58%.	80@85	95@$1.00	85@90
" 48%.	85@90	$1.00@$1.05	1.02½@1.05
Caustic Soda, high test....	$1.85@$1.90	2.25@2.30	$2.50@2.60
powd., 60%	.....	3.00@3.25	.....
70@74%.	.....	3.25@3.50	.....
98%.	.....	3.50@4.00	3.75@4.00
Sal Soda.....	70@80.	.....	67½@72½
"conc.	1.45@1.75	.....	1.60@1.65
Bicarb. Soda..	1.25@1.37½	.....	1.75@2.00
" " extra	3.25@3.50	.....	.....
Bleach Pdr., Eng. prime..	.....	.....	1.87½@2.00
other br'nds.	.....	.....	1.50@1.75
Chl. Pot. cryst	.....	9.50@9.75	10.00@10.25
" powd.	.....	9.75@10.00	10.25@10.50

Acids.—Demand is improving, especially for sulphuric acid. Blue vitriol is also in better request for export to Italy.

Quotations as below are for large lots delivered in New York and vicinity, per 100 lbs. unless otherwise specified:

Acetic, No.8 in lbs....$1.62½	Nitric, 36° $3.87½
Blue Vitriol, ... 5.25@5.50	Nitric, 38°..... 4.12½
Aqua Fortis, 30° 3 62½	Nitric, 40°..... 4.37
Aqua Fortis, 38° 3 87½	Nitric, 42°..... 4.75d.
Aqua Fortis, 40° 4.12½	Oxalic ....5.85@6.00
Aqua Fortis, 42°..... 4.50	Sulphuric, 66°..... 1.20
Muriatic, 15°. 1.20	Sulphuric, 60° 1.05
Muriatic, 20°. 1.35	" bulk 50° ton 14.00
Muriatic, 22°..... 1.50	Sulphurous, 100% SO_2 anhydrous. 8.00@10.00

Brimstone.—Very quiet, and prices easier, at $21@21.25 per long ton for spot best unmixed seconds, and about the same for shipments. Best thirds are nominal, at $2 less per ton. We note a charter of 1,772 tons from Licata to Portland, Me., at 9c. 9d. Imports at New York this week were 1,950 long tons.

Pyrites.—The Virginia producers are asking 25c. per ton more for lump ore. No change in other prices. Contract deliveries continue to absorb most attention.

We quote: Mineral City, Va., lump ore, $4.75 per long ton (basis 42%), and fines, $4.20. Charlemont, Mass., lump, $5.50, and fines, $5. Spanish pyrites, 13@15c. per unit, according to percentage of sulphur contents, delivered ex-ship New York and other Atlantic ports. Spanish pyrites contain from 46%@51% of sulphur; American, 42%@44%.

Fertilizing Chemicals.—Only moderate sales are reported of the leading ammoniates, owing to the policy of Western packers to maintain the high prices. Foreign gas sulphate of ammonia, to arrive is quoted at $2.90 per 100 lbs, while spot can be had at $2.92½@$2.95. Domestic 25% gas liquor is worth $2.85 per 100 lbs., f. o. b. Everett, Mass., including bags. Little fish scrap is offering, as the catch so far has been light.

Contract sales of Western tankage, 9@20%, were recently made at $2.10@$2.15 and 10 per unit, delivered in Baltimore. High-grade Western blood is unchanged at $2.05@$2.10 per unit f. o. b. Chicago; tankage, $1.95 and 10 f. o. b. Chicago; domestic steam ground bone, $21@$22 per ton.

The prices for potash salts at New York, Boston and Philadelphia, per 100 lbs., are as follows: Muriate of potash, 80@85%, basis 80%, $1.83; muriate of potash, minimum 95%, basis 80%, $1.86; sulphate of potash, minimum 90%, basis 90%, $2.05½; sulphate of potash, minimum 96%, basis 90%, $2.08½; manure salt, minimum 20% potash, 64@66c.; double manure salt, 48@53%, basis 48%, $1.06; kainit, 12.4% potash, $9.05@$9.30 per long ton; and sylvinit, 38½@39½c. per unit. For Norfolk prices add 2c. per 100 lbs. to the concentrated salts, except double manure salt, to which add 1c., and for kainit add 30c. per ton, and sylvinit 1c. per unit. For Charleston, Savannah, Wilmington, N. C., and New Orleans add 1½c. per 100 lbs. to the concentrated salts, except 20% manure salt, to which add 1c.; and to kainit add 20c. per ton, and sylvinit 1c. per unit. These prices are for not less than 500 tons of bulk salts or 50 tons of concentrated salts, and are based upon river shipments from the mines to seaport. For shipments by rail add 5c. per 100 lbs.

Nitrate of Soda.—Weaker on account of heavy arrivals. Imports this week were 26,727 bags at New York, and 41,600 bags at Philadelphia. There is still some demand from consumers, and sales on spot were made at $1.75 per 100 lbs., which is the nominal quotation on shipments. Importers expect a turn in the market for higher prices in the near future. A dividend of 7½% will be paid on May 15th by the Liverpool Nitrate Company, Limited.

The "Association for the Promotion of the Use of Nitrate in Chile" reports the production of nitrate of soda, in 1899, at 30,759,775 Spanish quintals (1,395,176 long tons); exports, 30,360,239 qtls. (1,377,054 tons); world's consumption, 30,712,192 qtls. (1,393,017 tons). Deducting from the total production 615,195 qtls. (27,903 tons) or 2% used by the local powder works, we have a net output of 30,144,580 qtls. (1,367,273 tons), showing that consumption exceeded production by 567,612 qtls. (25,000 tons).

Saltpeter.—Arrivals in April were 3,767 bags, against 10,616 bags in 1899; consumption during the month, 3,788 bags (9,614 in 1899); stocks on hand May 1st, 6,664 bags (7,324 in 1899); expected arrivals, 11,253 bags; apparent supply, 17,917 bags (16,806 in 1899). Spot is worth 3½c. per lb. and shipments, 3.40c. for crude saltpeter, and 4.50@5c. for refined.

Phosphates.—Wet weather has interfered with production. It is said that only about 50 rock-plants are in full operation in Florida, and according to some miners the market is in an unsatisfactory condition, owing to low prices.

The shipments of high-grade Florida phosphate rock from all ports, in the three months ending March 31st, are reported by Messrs. Auchincloss Brothers, as below, in long tons of 2,240 lbs.:

Destination.	1897.	1898.	1899.	1900.
Baltic ports.....	11,237	12,397	13,739	10,137
Continental ports.....	46,274	40,913	69,705	56,053
Mediterranean ports...	6,053	7,479	...	1,653
United Kingdom ports.	7,271	9,150	16,630	7,711
All other ports.....	.....	2,642	4,167	1,660
Totals, tons.....	70,835	72,581	104,241	77,241

So far this year no shipments have been made to domestic consumers.

In April the high-grade rock shipments from Savannah, Ga., amounted to 15,484 tons, all to foreign ports, making a total for the four months of 47,859 tons, as against 28,016 tons in 1899. The shipments from Punta Gorda, Fla., in the four months ending April 30th, were 6,445 tons, as against 20,672 tons in the same time in 1899.

In Tennessee the mine operators report a scarcity of labor, which restricts production to some extent. Prices are higher. Tennessee export rock contains 3@4% iron oxide and 2% alumina, while the domestic rock carries from 4@6½% iron oxide and 3% alumina.

A new deposit of phosphate rock similar to the Mt. Pleasant stuff is reported to have been discovered in Madison and Lancaster Counties in Alabama.

The shipments of phosphates through Bone, Algeria in the first quarter of this year amounted to 60,593 metric tons.

On export account we note a charter of 1,391 tons from Fernandina to London at 18s. 6d., and another of 1,704 tons from Tampa to Helsingborg at 22s., June sailing.

Ocean freight rates from Florida ports are about as follows: To Baltic ports, $5.04@$5.28 per ton; Continental, $4.56@4.68; Mediterranean, $4.89@$5.01, and United Kingdom ports, $4.44@$4.56.

We quote as follows:

Phosphates.	Per Ton F. o. b.	C i. f. Un'd Kingdom or No Sea Ports.	
		Unit.	Long ton.
*Fla. hard rock (77@80%)	$8.00@8.50	8¼@8⅝d	$12.87@13.06
*Fla. land pebble (68@73%)	4 35	7d	9 30
*Fla. Peace River. (58@6%)	3.00@3 50	6¼@6⅝d	7.80@7.95
†Tenn. Rock 78%, export.	4.50@4 25	7⅛@7¼d	11.15@11.31
†Tenn.....78% domestic.	3 50	.....	.....
†Tenn.....75% "	3.00@3.25	.....	.....
†Tenn.....72% "	2.65@2.75	.....	.....
‡So. Car. rock, undried.	3 75@4.00	.....	.....
‡So. Car. rock, dried....	4.50@4.75	.....	.....
‡So. Car. rock, ground...	6.00	.....	.....
Algerian, rock...(63@70%)	.....	7d	9 30
Algerian, rock...(58@63%)	.....	6¾d	8.18

*Fernandina. †Mt. Pleasant. ‡Fetteressa.

Concentrated phosphates, 13@15%, average P_2O_5 6½c. per unit ($9 per ton). Tennessee acid phosphates, high grade, $12 per short ton, and low grade, $10, f. o. b. Nashville.

Liverpool. May 2.

(Special Report of Joseph P. Brunner & Co.)

There is nothing of special interest to report with reference to heavy chemicals, the market being quiet, while quotations for most lines are practically unchanged.

Soda ash continues in moderate compass with usual varying quotations, according to export market. We quote range for tierces about as follows: Leblanc ash, 48%, £4 15s.@£5; 58%, £5 5s.@£5 10s. per ton, net cash. Ammonia ash, 48%, £4 5s.@£4 10s.; 58%, £4 10s.@£4 15s., per ton, net cash. Bags are 5s. per ton under price for tierces. Soda crystals in fair request and steady at £3 2s. 6d. per ton, less 5% for barrels, or 7s. less for bags, with special terms for certain favored markets. Caustic soda is still scarce, high test being almost unobtainable for prompt delivery, and £12 paid for 78@79%. We quote range as follows: 60%, £9 5s.; 70%, £10 5s.; 74%, £10 15s.; 76%, £11@£11 10s. per ton, net cash.

Bleaching powder is dull and sluggish at £7@£7 5s. per ton, net cash, for hardwood packages. Makers are fairly busy with deliveries on contracts, but fresh orders are not coming in very freely.

Chlorate of potash is inactive at 4½@5½d. per lbs., net cash.

Bicarb. soda is quiet, and quotations vary according to export market, ranging from £5 5s.@£6 15s. per ton, less 2½% for the finest quality in 1-cwt. kegs, with usual allawonces for larger packages.

Sulphate of ammonia is neglected by buyers and is nominally quoted at about £11 12s. 6d.@£11 15s. per ton, less 2½% for good gray, 24@25% in double bags, f. o. b. here.

Nitrate of soda is in larger supply, and with only a limited demand. Quotations are easier at about £8 10s.@£8 15s. per ton, less 2% for double bags, f. o. b. here, as to quality and quantity.

MINING STOCKS.

Complete quotations will be found on pages 577 and 578 of mining stocks listed and dealt in at:

Boston. Philadelphia. Montreal.
Colo. Springs. Spokane. London.
Denver. Salt Lake. Mexico.
New York. San Francisco. Paris.
Toronto.

New York. May 11

Trading is mostly professional and prices are sluggish. In the copper group Amalgamated receded to $86¾, Anaconda to $43, Union of North Carolina to $6 and British Columbia to $10¼ on limited sales. American Smelting and Refining common was strengthened to $41 on an unofficial report that these shares were to be put on a moderate dividend basis in the near future; the preferred shares fluctuated fractionally between $89⅝ and $88½. Alice of Montana sold at 45@50c. Standard Consolidated of California brought $4, Brunswick 25@28c., and Quicksilver preferred $8.50. In the Colorado group Elkton sold at $1.30, Isabella at $1.30@$1.25, Raven at 64c., Jack Pot at 70c., Anaconda at 36c., Work 34@35c., Pharmacist 11½@14½c., Alamo 16c., Cripple Creek Consolidated 14c., Argentum-Juniata 20c., Mollie Gibson 24c., and Crescent 15c.

Comstocks were weaker. Consolidated California & Virginia sold at $1.45, Gould & Curry at 30c., Mexican 25c., Yellow Jacket 21c., and Savage at 18c.

Efforts have been made on the curb to interest the public in the much advertised Alaska Nome Nugget, Limited, of Cape Nome, and sales aggregating 1,500 shares were reported at $3.25 @$3.50 on May 7th. This company is capitalized at 1,250,000 shares of $5 par, and claims to have purchased its property from Amasa Spring, the United States Mineralogical Surveyor in Alaska, who, it is said, was one of the first locators of mineral property in the Cape Nome District. Mr. Hugh McDonnell is the vice-president and general manager of the company, and will take personal charge of its operations at Cape Nome. Mr. McDonnell is the original owner of the Panuco Copper Mine, which was floated in London, and, as our correspondent wrote recently, it is in liquidation.

Papers were filed at Trenton May 3d by the American Bridge Company for an increase of its capitalization to $70,000,000, of which $35,000,000 will be 7% preferred and $35,000,000 will be common stock. The original certificate of the company, which was filed April 14th, authorized a capital of only $100,000. The company takes over 24 of the principal bridge building concerns in the United States. The new company was first projected early in 1899, with Harriman & Company as its financial sponsors. This firm afterward dropped it. It was taken up later by J. & W. Seligman & Company. Last September representatives of 30 leading bridge companies were brought together and the affairs of the proposed combination were partly straightened out. No cash is paid for the purchase of the properties, except in the case of the Pencoyd steel plant. In that case the bridge works is taken over for stock on the same basis as other plants, but the steel plant is paid for partly in cash.

Boston. May 9.

(From Our Special Correspondent.)

The mining stock market has a little broader range this week, but is still dull. The most marked point has been the tendency of every small rise to bring out a flood of stock; thus showing how many are ready and anxious to unload at every opportunity.

The only special feature has been a little rise in Boston & Montana, following the decision which affords some prospect of an end to the

legal complications resulting from the organization of the new company in New York.

In the coppers, Calumet & Hecla is quoted at $755; Boston & Montana at $295; Tamarack, $175½; Quincy, $135½; Osceola, $64½; Parrot, $40½; Wolverine, $38½; Utah, $28.

In the other mining stocks Centennial-Eureka sold at $23, and Cochiti at $9½. United States Oil was quoted at $18. Dominion Coal was stronger, at $42½@$43.

Very little is being done in the new zinc mining shares, though their prices keep up well. The newer companies do not seem to be meeting with much favor, and stock sells slowly, in spite of all the advertising done.

Boston does not take kindly to the new Cape Nome concerns, which are being advertised here, as well as in New York. We do take up "wildcats" here, but we prefer our own special breeds of those animals.

Salt Lake City. May 5.

(From Our Special Correspondent.)

It goes without comment that the terrible Scofield calamity has had a depressing influence on the trading in Utah mining shares. Little interest was taken in the market during most of the week, though there was a slight change for the better yesterday, and more of an improvement to-day. Sales for the week are reported at 48,956 shares, which sold for $46,735.

Ajax shows more strength, with a good string of buying orders on hand. Bullion-Beck is quiet and sluggish. Centennial-Eureka remains down in spite of the handsome production and improved ore uncoverings. It is very evident the Bostonians have not recovered their second wind and full confidence. Daisy's foreclosure sale—$25,000—takes place May 12th, when the curtain will be rung down on this proposition. Daly has sagged a few points. Daly-West rules strong, just above $19. The regular $37,500 dividend was declared to-day. Dexter is gaining and again seems to be in better favor. Four Aces has taken a spurt, and there is an intimation that ore finds in undisputed ground will make it unnecessary to levy other assessments—which would seem too good news to prove true. Grand Central of a sudden put on strength, and there are hints of a dividend this month. The directors meet next week. Mammoth has continued to do a stirring business under $2.25. A May dividend is promised. Mercur is in better form, as the management has acquainted itself somewhat of the magnitude and worth of its ore bodies. Silver King did business to-day at $52.50. It will pay the regular $75,000 dividend on the 10th, and on the same day Swansea pays its customary $5,000 dividend. The sensation of the week was the lively spurt in Valeo on the call to-day. At the opening it sold below $1 and closed $1.08½ bid, $1.09½ asked, with a keen demand for the shares. For some days there have been rumors of pleasant showings at the property.

San Francisco. May 5.

(From Our Special Correspondent.)

We have had the usual kind of market this week, with perhaps a little more firmness in prices; but it is inside business, with small turns in prices and small trading.

There is some talk of consolidating all the exchanges here into one body, to cover all the business.

Some quotations noted are: Consolidated California & Virginia, $1.55; Caledonia, $1.35; Ophir, 54@55c.; Sierra Nevada, 38c.; Chollar, 22c.; Yellow Jacket, 21c.; Gould & Curry, 19@20c. No business was done outside the Comstocks.

The Utah Consolidated Mining Company has levied an assessment of 5c. a share. An assessment on Ophir stock is looked for soon.

The sales on regular call at the San Francisco Stock Exchange for the year to date compare as follows:

	1899.	1900.
January, shares	121,955	164,400
February	350,860	112,000
March	272,625	252,730
April	209,215	121,500
Total	954,655	650,630

A decrease of 300,000 shares in four months is rather a poor showing, especially when we remember that last year was not a lively one for mining stocks.

Business on the Producers' Oil Exchange was rather quiet. The chief interest centered in Home Oil, which sold up to $4.55. The organization of new oil companies is going on at a great rate.

London. April 24.

(From Our Special Correspondent.)

The London mining stock market has been practically non-existent this week. The South African section is still waiting for developments in the war, and West Australians are waiting for some authoritative announcement relative to the treatment of sulphides and low grade ores. During the last few weeks the general dulness has been somewhat relieved by dealings in shares in copper mining companies, but this week even this feature of the market has dropped off, as the supply of buyers of this class of security has come to an end for the present. The American section has been quite out of evidence for some time past, and all the British Columbia companies have been in the background.

A Canadian company that has had some vicissitudes is the Mikado Gold Mining Company, Limited, which owns the mine of that name in the Lake of the Woods District, but from the report for 1899 just issued, the company seems to have got on to a business basis now. The company was formed four years ago and with £14,000 in cash as capital some development was done and a 20-stamp mill and cyanide plant erected. For some time the results obtaind were far from satisfactory, but a year ago the management was changed and things have gone on better since. The manager estimates that there are about a million and a quarter tons of ore in sight, averaging $10 per ton, and there are parts where the contents are as high as $15. Since the plant was in operation 27,378 tons have been treated, producing 14,334 oz. of gold bullion, and 9,457 tons of talings have been treated yielding gold valued at £5,771. A net profit from the commencement up to December 31st, 1899, of £6,800 has been made and the directors advise a dividend at the rate of 5% to be paid on the capital of £43,000. It is also advised that an additional 20-stamp shall be erected and it is hoped that a profit of £3,000 a month will then be made. The present managers appear to be live men and capable of conducting mining operations under comparatively disadvantageous conditions.

Among the British Columbia companies organized in London that started out with excellnt prospects was the Gold-Fields of British Columbia, Limited, which was organized in 1897 by Mr. Grant Govan, with the assistance of many rish and influential supporters. The Tangier and Waverley silver-lead properties in Albert Canyon were acquired and at first they looked extremely promising. Developments, however, showed that they were practically surface concentrations, or at any rate deposits of limited extent. The worst of it was that large sums of money were spent in railways and other plants before sufficient exploring work had been done to test the extent of the veins, so that eventually the losses were considerable. Subsidiary companies had been floated to work these two mines separately. It is now proposed to amalgamate all three companies and raise additional capital in order to look for other properties in any part of the world.

Paris. April 29.

(From Our Special Correspondent.)

Changes and fluctuations in mining shares have not been especially remarkable during the week. Speculation continues strong, however, and much business is going on.

The exception is in the South African gold shares, in which the buying and selling have been small. Quotations are little changed, however, and no weakness has developed.

The copper shares continue to be the great attraction. With all the fluctuations of the metal its price is still high. A few persist in attributing this to the much discussed American "trust"; but the better informed see very clearly that most European manufacturers have allowed their stocks to run down to a very low point in the hope of forcing lower prices. The time has come when they must purchase supplies, and this is shown by the very large shipments from your side. Our buying must be considerable for a time, since the metal is urgently needed.

The bill now before the Chamber of Deputies which amends the company law so as to permit the issue of shares of a par value of 25 fr., has been approved by a committee of the Paris Chamber of Commerce, and will probably pass. At present the minimum limit for shares is 100 fr. par value, except for companies whose total capital is 200,000 fr. or less. These small companies can issue 25 fr. shares.

The Paris Municipal Council has accepted the last proposals submitted by the syndicate of "agents de change" for the enlargement of the Paris Bourse building. The schemes for the removal of the Bourse to a new building to be erected in the garden of the Palais Royal, and that for a hall underneath the basement of the present Bourse, have been abandoned, and that for constructing two lateral wings in the rear of the present building has been adopted. The colonnade will be extended on each side, so as to preserve the architectural plan. The expense, estimated at 4,000,000fr., will be borne by the "agents de change," and the lease will be extended for a period of 60 years. The work will be terminated in 3 years after the authorization of the State has been obtained.

A recent writer estimates that the profits divided among the 70 "agents de change" of the Paris Bourse, after paying all expenses, amount to 89,000,000fr. yearly, or about 1,270,000fr. for each. These profits are larger than ever since the Bourse was reorganized last year.

M. Leroy-Beaulieu and his committee continue to amuse themselves by arranging terms of peace between Great Britain and the South African Republic. It is to be noted that all their plans involve the surrender of nearly or quite all the British claims in the controversy. Meantime the contending parties pay very little attention to these well meaning but quite ineffectual diplomats.

Azote.

DIVIDENDS.

NAME OF COMPANY.	Latest Dividend. Date	Per share.	Total.	Total to date.
Amanda Con. Colo.	June 1	.01	10,000	10,000
Bethlehem Steel	June 1	.50	150,000	
Boston & Montana	May 29	10.00	1,500,000	17,200,000
*Bullion Beck, Utah	May 15	.10	10,000	2,488,400
†Cambria Steel	May 15	.50	160,000	
*Central Lead, Mo	May 15	.50	5,000	167,000
*Com'nwealth Zinc, pf	June 1	.05	5,000	50,000
*Cordell Zinc, Mo	May 15	.05	3,000	18,000
*Croesus, Cal	May 1	.06	11,400	83,300
*Daly West, Utah	May 15	.25	37,500	345 000
Desloge Con. Lead, Mo	May 1	.20	20,000	70,000
*Empire State, Idaho	May 15	.30	29,554	465,808
*Mont. Ore Purch	May 21	1.00	80,000	1,520,000
†National Carbon, pf.	May 15	1.75	78,750	236,250
†National Salt, com	Aug. 1	1.50	52,500	
*N.Y.Hond.&R'sario	May 12	.10	15,000	1,235,000
†Park Steel, pf	June 1	1.75		
†Pressed Steel Car, pf.	May 28	1.50	187,500	
" " " com	May 21	1.50	187,500	
*Silver King, Utah	May 10	.50	75,000	2,825,000
Standard Con. Cal	May 21	.10	20,000	3,939,226
Standard Oil	June 15	10.00		
†U.S.Cast I.P.& F.,pf.	June 1	1.75		

* Monthly. † Quarterly.

ASSESSMENTS.

NAME OF COMPANY.	Location.	No	Delinq.	Sale.	Amt.
Acorn	Utah	2	Apr. 21	May 12	.00½
Alaska	Utah		Apr. 25	May 14	.02
Alpha Con	Nev.,	23	May 24	June 14	.03
Belcher	Nev.,	64	May 29	June 19	.15
Best & Belcher	Nev.,	70	May 11	May 31	.15
Bunker Hill	Utah	4	Apr. 27	May 15	.00½
Challar	Nev.	51	Apr. 25	May 16	.15
Eureka Swansea Ext.	Utah	1	Apr. 16	May 15	.00½
Kutonia	Utah	1	May 4	May 24	.01
Four Aces	Utah	4	Apr. 26	May 16	.02
Goleta Con	Cal.	1	May 30	June 27	.06
Grape Vine Canyon	Cal.	2	May 8	May 29	.07
Hilda Gravel	Cal.		May 7		.01
Independence	Utah		Mar. 20	May 9	.02
Independent	N'me	1	May 3	May 21	.10
Jenny Lind	Cal.		May 31		.01
Joe Bowers Ext.	Utah	7	May 21	June 8	.10
Justice	Nev.		May 29		.05
Lion Con	Utah	3	June 2	June 20	.00½
Lucky Bill	Utah		Apr. 30	May 21	.02
Marina Marsicano	Cal.	23	May 7	May 28	.62
Mariposa Com'l	Cal.	16	May 10	June 5	10.00
Maxfield	Utah	7	Apr. 30	May 28	.09
Mayflower	Utah		May 1	May 20	.00½
May Day	Cal.		June 10		.10
Meteor	Utah		Apr. 14	May 17	.00½
Mountaineer	Cal.	18	May 18		.20
Osceola Con	Cal.	9	Apr. 28	May 21	.01
Reward	Cal		May 12		.02
Savage	Nev.	100	May 8	May 28	.10
Silver Park	Utah	2	May 7	May 26	.02
Siskiyou Con. q	Cal.		May 22		.03
Skagit Cumb'la'd Coal	Was.	7	Apr. 17	May 15	.01½
Snow Flake	Utah		Mar. 1	May 31	.05
South Paloma	Cal.	2	Apr. 23	May 14	.006
Tetro	Utah	12	Apr. 28	May 19	.01
West Morning Glory	Utah	4	May 17	June 7	.00½
Yellow Jacket	Nev.	3	Apr. 10	May 15	.15

ANNUAL MEETINGS.

Name of Co.	Locat'n.	Date.	Place of Meeting.
Alamo	Utah	May 21.	Salt Lake City, Utah
Amalg'm'tdC'p'r	Mont.	June 4.	52 Broadway, N. Y.
Anaconda	Mont.	May 16.	Anaconda, Mont.
Anchoria Leland	Colo	May 15.	Colo. Springs, Colo.
Bunker H. & Sull	Idaho	June 17.	San Francisco, Cal.
Crown Point	Nev	June 7.	San Francisco, Cal.
Dominion Coal	N.Sc'tia	June 1.	Boston, Mass.
E. Sierra & Nev.	Nev	May 14.	San Francisco, Cal.
*Elkton Con.	Colo	June 4	Colo. Springs, Colo.
*Golden Star	Utah	May 24.	Salt Lake City, Utah.
Goleta	Cal.	May 19	San Francisco, Cal.
National Con	Cal.	June 6.	San Francisco, Cal.
Penn. Coal.	Penn.	May 16.	Dunmore, Pa.
*Pioneer	Cal	May 31.	Helena, Mont.
Quicksilver	Cal.	June 19.	20 Nassau St., N. Y.
Quincy	Mich.	June 7.	45 Broadway, N. Y.
*Raven	Colo.	June 4.	Colo. Springs, Colo.
Scorpion	Nev	May 14.	San Francisco, Cal.
Shawmut	Utah.	May 14.	Salt Lake City, Utah.
Tornado	Colo.	June 4.	Colo. Springs, Colo.
Va. Iron, Coal & Coke	Va.	May 15	Pulaski, Va.
Wyandot	Mich.	May 14.	Boston, Mass.

*Special meeting.

STOCK QUOTATIONS.

NEW YORK.

Name of Company	Location.	Par val.	May 4. H.	May 4. L.	May 5. H.	May 5. L.	May 7. H.	May 7. L.	May 8. H.	May 8. L.	May 9. H.	May 9. L.	May 10. H.	May 10. L.	Sales
Alamo	Colo..	1	.14½	....	....	....	....	....	.16	....	....	....	.16	.14	1,000
Alice, g. & s.	Mont.	25	.40	....	....	....	.45	....	....	.50	....	....	.65	.48	600
Amalgamated C	"	100	89.00	88.00	....	....	....	....	87.50	87.25	87.50	87.00	88.00	87.25	2,600
*Anaconda, c.	"	25	45.00	44.63	45.00	....	45.00	44.25	44.75	44.00	43.88	43.00	43.88	....	5,185
Anaconda Gold	Colo..	5	.36	....	....	....	....	....	.38	....	....	....	....	....	1,000
Argentum-Jun..	"	2	.20	....	....	....	....	....	.19	....	.20	....	.19	....	500
Ariz. Lead	Ariz..	25	16.25	15.75	....	....	....	....	16.25	15.75	16.25	16.00	16.25	15.75	....
Brit.Col.Copper	B. C..	1	12.00	11.50	....	....	....	....	11 00	10.50	11.00	10.50	11.00	10.25	370
Brunswick	Cal..	3	.26	....	....	....	.25	....	.25	....	.28	....	.30	.25	700
Chollar	Nev..	3	.18	....	....	....	....	....	.18	....	....	....	.17	....	....
Chrysolite	Colo..	100	.05	....	.06	....	....	....	.05	....	....	....	.08	.05	200
Comstock T.	Nev..	100	.02½	....	....	....	....	....	.03	....	....	....	.03½	.03	....
" bonds	"	100	.02½	....	....	....	....	....	.03	....	....	....	.02½	....	....
Con. Cal. & Va.	"	2½	1.50	....	....	....	....	....	1.40	....	1.45	....	1.40	....	100
Crescent	Colo..	1	....	....	....	....	.15	....	....	....	....	....	....	....	100
Cripple Cr. Con.	"	1	....	....	.14	....	....	....	.14	....	....	....	....	....	1,500
Daly	Utah.	20	1.25	....	....	....	....	....	1.30	....	....	....	....	....	....
Deadw'd Terra.	S. Dak	25	.55	....	....	....	....	....	.55	....	....	....	.55	....	....
Elkton	Colo..	1	....	....	....	....	....	....	....	....	1.80	....	....	....	....
Father de Smet.	S. Dak.	1	.07	....	....	....	....	....	.07	....	....	....	.07	....	....
Garfield Con.	Colo..	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Golden Age	"	1	....	....	.04½	....	.04	....	....	....	.04½	....	....	....	2,500
Golden Fleece	"	1	.32	....	....	....	....	....	.30	....	....	....	.30	....	....
Gould & Curry	Nev	3	....	....	....	....	30	....	....	....	....	....	....	....	500
Homestake	S. Dak	100	50.00	....	....	....	....	....	50.00	....	....	....	50.00	....	....
Horn Silver	Utah..	20	1.25	....	....	....	....	....	1 25	....	1.25	....	1.30	1.25	....
Iron Silver	Colo.	20	.68	....	....	....	....	....	.68	....	....	....	.68	....	....
Isabella	"	1	....	....	....	....	1.30	....	1.25	....	....	....	1.30	1.20	400
Jack Pot	.....	....	....	....	....	....	....	....	.70	....	....	....	....	....	300
King Pemb	Ont..	10	.40	....	....	....	....	....	....	....	....	....	....	....	100
Lacrosse	"	1	.14	....	....	....	....	....	.14	....	....	....	....	....	....
Little Chief	Colo..	1	.18	....	....	....	....	....	.18	....	....	....	.23	.18	....
Mexican	Nev..	3	.27	....	....	....	....	....	.25	....	....	....	.21	....	200
Mollie Gibson	Colo	5	.23	....	.24	....	....	....	.24	....	.23	....	.22	....	1,000
Milton	Mont.	5	....	....	.85	....	....	....	....	....	....	....	....	....	100
Ontario	Utah.	100	8.00	....	....	....	....	....	7 75	....	....	....	7.75	....	....
Ophir	Nev..	3	.50	....	....	....	....	....	.48	....	....	....	.42	....	....
Pharmacist	Colo	1	.11½	....	.11¾	....	.11¾	....	.12½	....	.14½	....	....	....	6,000
Phoenix	Aris..	1	.08	....	....	....	....	....	.08	....	....	....	.08	....	....
Plymouth	Cal..	10	.17	....	....	....	....	....	.13	....	....	....	.10	....	100
Portland	Colo..	1	2 65	....	....	....	....	....	....	....	....	....	2.65	....	....
Potosi	Nev..	3	.20	....	....	....	....	....	.18	....	....	....	.15	....	....
Quicksilver	Cal..	100	1 50	....	....	....	....	....	1.63	....	....	....	....	....	100
do. pref	"	100	7.50	....	....	....	8 75	....	9 25	9.00	....	....	....	....	500
Raven	Colo..	1	....	....	....	....	.64	....	....	....	....	....	....	....	500
Savage	Nev..	2	.04	....	....	....	....	....	.18	....	....	....	....	....	500
Sierra Nevada	"	3	.43	....	....	....	....	....	.30	....	....	....	.27	....	300
Small Hopes	Colo	20	1.00	....	....	....	....	....	....	....	....	....	1.00	.75	300
Standard Con.	Cal..	10	4.00	....	4.00	....	4.00	....	3.25	....	....	....	3.55	3.25	500
Syndicate	"	1	....	....	....	....	....	....	.09	....	....	....	....	....	500
Tenn Copper	Tenn.	10	15.00	13 50	....	....	....	....	15.00	13.50	15.00	13.50	14 00	12.00	....
Union Con.	Nev..	2½	.15	....	....	....	....	....	.17	....	....	....	.17	....	....
Utah	Utah.	10	....	....	....	....	....	....	....	....	....	....	....	....	....
Work	Colo.	1	....	....	....	....	....	.34	....	.38	.34	....	....	....	1,600
Yellow Jacket	Nev..	3	.15	....	....	....	....	....	.21	....	....	....	.12	....	1,000

COAL AND INDUSTRIAL STOCKS.

Am. Sm. & Ref.	.....	$100	37¼	37	37⅛	.....	38¼	37⅝	37⅝	37	41	37⅛	40⅜	.....	14,295
" " pf	.....	100	88¼	88¼	89	.....	89⅝	88¼	89	88¼	89	88¼	89⅝	.....	3,436
Am.S & W.Co	.....	100	4 8⅝	39⅝	40⅜	39	39¼	37⅝	38¼	36⅛	38	36⅜	40¾	.....	78,175
" " pf'r n	.....	100	77⅜	76¾	77¼	77	77¼	76	76⅝	76	77	76	80	.....	3,855
Am. Tin Plate	.....	100	27⅜	27	27	.....	.....	.....	26	23½	25¾	25	26¾	.....	2,720
" " pf	.....	100	78½	78	79	.....	78	.....	78	77⅜	77¾	.....	77	.....	1,491
Col. Fuel & I.	Colo..	100	40¾	40	.....	.....	40	39¾	40	36¾	36⅝	36¼	39	.....	7,535
Col. & H.C.&I.	"	100	.....	.....	.....	.....	17	.....	16¾	.....	15	13¾	16	.....	9.0
Federal Steel	.....	100	41	40¾	41	40¼	39½	38¾	38¾	37⅝	39¼	37⅝	40	.....	58,473
" " pf	.....	100	69	.....	69	69⅜	68¼	67⅝	67⅝	66¾	67¼	66¼	68¾	.....	9,640
Fleming'n C.&C	W.Va.	100	30	23	30	23	30	23	30	23	27	22	.....	.....	970
Int'l Pump	.....	100	19¼	18	20	18	20	18	19	18¾	19	18¾	20	19¼	1,000
National Lead	N. Y.	100	21¾	21⅝	.....	.....	21¾	.....	20¾	20⅜	20¾	20⅛	.....	.....	970
" " pf	.....	100	.....	.....	.....	.....	.....	.....	.....	.....	102¾	.....	.....	.....	170
National Salt	.....	100	46	45	46	45	46	44¼	45	43	.....	.....	44¾	43	700
" " pf	.....	100	76	74½	77	75	75	72	75	74	74	71	74	72	.....
Nat'l Tube	.....	100	50	49⅝	.....	.....	.....	48¾	47¾	46¼	47	45½	47	.....	9,280
Press. St. Car	Pa....	100	48¾	48¾	.....	.....	50	48¾	49¾	48¾	48¾	.....	48	.....	2,209
" " pf	.....	100	.....	.....	81	.....	.....	.....	80	.....	.....	.....	.....	.....	285
Republic I. & S.	.....	100	16¾	16	16¼	16¾	17¼	16	15¾	15	17⅜	14¾	15¾	.....	4,545
" " pf	.....	100	57¾	57	.....	.....	59⅝	.....	57	56	57	.....	57	.....	3,380
Sloss-Shef.	.....	100	25	23	25	23	25	23	26	24	26	24	25¾	23¼	100
" " pf	Ala...	100	67	64	67	64	67	64	68	64	68	64	67	64	....
Stan.Oil of N.J.	"	100	545	542	.....	.....	544	540	543	540	543	539	543	542	300
Tenn.C.,I.&R.R.	"	100	82¾	79½	82¾	81¾	80¾	79¼	79¾	77	76¾	76¼	78¾	....	14,569
" " pf	"	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	....
U.S.Cast I.P.&F	.....	100	6	6	6	5¾	6	5¾	6	5¾	6	5¾	6	5¾	....
" " pf	.....	100	45¾	45	45¾	44¾	45¾	44¾	45¼	44¼	45¾	44¾	45	44	....
Va.Coal & C	W.Va.	100	17¾	18	18	17	17	15	17	....	17	....	....	....	....

Ex-dividend. Total sales, 269,683.

PHILADELPHIA, PA.*

Name of Company.	L'cation.	Par Val.	May 3. H.	May 3. L.	May 4. H.	May 4. L.	May 5. H.	May 5. L.	May 7. H.	May 7. L.	May 8. H.	May 8. L.	May 9. H.	May 9. L.	Sales
Am. Alkali	.....	.....	2 50	....	2.38	2.13	2.00	....	2.00	....	2.00	....	2 00	....	2,255
" " pf.	.....	.....	....	....	....	....	.50	....	....	....	....	....	....	....	50
Bethlehem Iron	Pa.	.....	....	....	58.50	58 00	58.00	....	....	....	....	....	58.00	....	65
Bethlehem S'l	"	$50	....	....	16.00	15.50	16.00	15 88	15 50	14.50	15 00	14.50	14.50	13 50	3,780
Cambria Iron	"	50	44.00	....	44.00	....	....	....	....	....	44.50	44.00	44.50	44.25	115
*Cambria S'l	"	50	19.25	19.00	19.25	18.75	18.75	18 50	18.75	18.25	18.65	18.25	18.75	18 00	10,366
Susq. I. & S.	"	10	3 63	3.50	3 50	....	3.63	3.50	3.88	3.63	3.50	....	3.50	3 00	1,730
United Gas I.	"	50	114⅜	113¾	114	....	113¾	113⅜	113¾	113¼	115	....	115¼	114¾	113¾	112	3,225

Total shares sold, 21,374. * Reported by Townsend, Whelen & Co., 309 Walnut St., Philadelphia.

SAN FRANCISCO, CAL.

Name of Company.	Location.	Par value.	May 3.	May 4.	May 5.	May 7.	May 8.	May 9.
Belcher	Nev.	$3.00	.12	.12	.12	.11	.11	.10
Best & Belcher	"	3.00	.17	.17	.16	....	.29	.28
Caledonia	"	3.00	1.35	1.30	1.25	1.26	1.10	.99
Challenge Con	"	3.00	.16	.14	.14	.14	.14	.13
Chollar	"	3.00	.21	.22	.21	.21	.2)	.18
Confidence	"	3.00	.80	.80	.80	.80	.77	.75
Con. California & Virginia	"	2.50	1.55	1.55	1.50	1.50	1.50	1.50
Crown Point	"	3.00	.10	.10	.11	.10	.10	.10
Gould & Curry	"	3.00	.20	.20	.19	.17	.15	.15
Hale & Norcross	"	3.00	.33	.33	.32	.31	.29	.29
Justice	"	2.00	.02	.02	.02	.03	.03	.03
Mexican	"	3.00	.28	.28	.26	.24	.24	.23
Occidental Con	"	3.00	.08	.09	.08	.07	.12	.12
Ophir	"	3.00	.53	.53	.52	.50	.51	.47
Potosi	"	3.00	.24	.23	.21	.20	.19	.18
Savage	"	2.50	.06	.06	.06	....	.13	.13
Sierra Nevada	"	3.00	.36	.35	.33	.32	.31	.30
Standard Con	Cal.	10.00	3.60	2.80	3.90	4.00	4 50	3.65
Union Con	Nev.	2.50	.21	.20	.20	.20	.19	.19
Utah Con	"	3.00	.08	.08	.08	.08	.08	.07
Yellow Jacket	"	3.00	.20	.20	.19	.18	.16	.15

CALIFORNIA OIL STOCKS.*

Name of Company.	No. of shares.	Par Val.	Apr. 7. H.	Apr. 7. L.	Apr. 9. H.	Apr. 9. L.	Apr. 10. H.	Apr. 10. L.	Apr 11. H.	Apr 11. L.	Apr 12. H.	Apr 12. L.	Apr. 13. H.	Apr. 13. L.	Sales
Anaconda	100,000	$5.00	.55	.45	.60	.35	.60	.55	.55	.50	.50	....	.50	.45	3,650
Barker R'nch	200,000	1.00	1.15	....	1.15	1.10	1.15	....	1.15	....	1.15	....	1.15	....	1,190
Blue Goose	5,000	100	18.50	....	18.50	10.00	18.00	....	17.75	....	17.75	13.00	18.00	17 75	....
Buckhorn	16,000	10.00	4.10	....	4.10	....	3.95	....	3.75	3.05	3.75	3 50	3.90	3.75	100
Caribou	100,000	1.00	.70	.60	.70	....	.70	.60	.60	.40	.60	....	.50	....	50
Home	100,000	1.00	3.60	3.55	3.55	....	3.55	3.50	3.60	3 40	3.70	3.50	3.80	3 70	2,880
National	100,000	5.00	6 25	....	6.25	....	6.25	....	6.25	....	6.25	....	6.25	....	....
Petroleum	100,000	1.00	.35	....	.30	....	.30	....	.35	.30	.35	.30	.30	....	400
San Luis	100,000	10.00	....	....	....	....	....	....	....	....	....	....	1.25	....	....
Shamrock	100,000	5 00	....	....	.35	....	....	....	.90	.80	.80	....	.90	.70	....
Yukon	100,000	2.50	1.45	1.30	1.50	1.35	1.25	....	1 30	1.25	1.30	1.25	1.30	1.25	750

* California and Producers Oil Exchanges. Total sales, 5,990 shares.

BOSTON, MASS.†

Name of Company.	Par val.	No. of shares.	May 3. H.	May 3. L.	May 4. H.	May 4. L.	May 5. H.	May 5. L.	May 7. H.	May 7. L.	May 8. H.	May 8. L.	May 9. H.	May 9. L.	Sale
Adven'u'e,Cons	$25	100,000	....	....	....	....	....	....	5 00	....	....	....	4.75	....	85
Aetna, Cons. g.	5	100,000	....	....	2.50	2.25	2.25	....	3.25	....	....	....	....	....	600
Alloues	25	80,000	1 75	....	....	....	.50	....	2.00	....	2.00	....	....	....	197
Amal. Cop.	100	750,000	89.00	88 00	90.00	88.75	89.00	88.00	88.50	87.50	88 00	87.00	87.50	86.50	1,814
Am. Z. L. & S.	25	60,000	....	....	....	....	....	....	....	....	....	....	13.50	....	112
Anaconda		300,000	....	....	4.75	....	....	....	....	....	....	....	45.00	....	160
Arcadian, c.	25	150,000	19 50	....	....	....	19.50	19.00	....	....	....	....	18.50	17.80	18.25	18.00	687
Arnold, c.	25	60,000	6.50	6.00	....	....	....	....	....	....	....	....	6.00	....	6.00	5.50	935
Ashbed	25	400,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Atlantic, c.	25	40,000	....	....	....	....	24.13	....	25.00	24.00	24 00	22 25	23.50	21.75	464
Baltic, c.	25	100,000	20.00	19.75	....	....	....	....	20.00	....	20 00	19.00	....	....	1 280
Bingham, c. g.	10	190,000	....	....	10.25	....	10.00	....	10.00	....	....	....	9 50	9.00	1,255
Bonanza, Dev.s	10	$300,000	18.50	13.00	18.25	17.50	18.00	....	17.50	....	17.50	6.88	17.00	16 75	2,105
Boston & C. C.		$300,000	....	....	1.13	1.00	1.13	1.00	1.03	....	1.13	1.00	1.00	....	3,860
Bos.&Mon.Tr.R	25	150,000	296	290	291	290	290	....	295	285	295	287	294	290	697
British Col.	5	200,000	11.88	....	11.88	11.75	11.88	11.75	....	....	....	....	....	....	700
Butte & Bost., c	10	200,000	70 00	....	70.00	68.00	....	....	69.00	68.00	68.50	65.00	....	....	1,425
Cal. & Hecla, c.	25	100,000	753	750	753	....	753	750	....	....	753	....	755	753	60
Catalpa		800,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Centennial, c.	10	$800,000	18.50	13.00	18.25	17.50	18.00	....	17.50	....	17.50	6.88	17.00	16 75	2,105
Cent'l-Eureka		90,000	25.00	....	24.00	23.50	23.75	....	23.75	....	23 75	23.00	23.00	....	787
Central Oil	25	100,000	....	....	16.00	15.00	15.00	....	14.75	....	14.50	14.00	13.50	12.50	1,350
Cochiti, g.	25	60,050	11.00	....	11.00	....	10.88	10 50	11.00	9 75	10 25	9.50	10.00	9.50	2,132
Cont.ZLMg&Sm	10	157,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Copper Range	10	110,000	20.00	....	20.00	....	....	....	20.00	....	....	....	....	....	400
Crescent, s.	10	100,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Dominion Coal	25	100,000	44.50	....	44.00	....	....	....	44.25	43 00	....	....	43 5)	42.50	1,350
do. pref.	100	150,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Elm River	100	20,000	4.50	....	4.50	....	4.50	....	4.25	....	4.25	....	4.13	4.00	900
Federal Steel	12	100,000	41.00	40.25	41 13	40.75	....	....	39 75	38.50	38.75	37.63	39.00	38.00	7,495
do. pref.	100	464,843	....	....	....	....	....	....	68 25	67.75	68.00	66.50	67.5)	66.50	659
Franklin, c.	25	532,610	15.00	....	14.75	....	14.63	14.50	14 00	....	14 0.	13.00	13.25	....	1,340
I. Royal Con. c.	25	100,000	....	....	25 00	....	26 00	....	26.00	25.50	25.50	25.00	25.00	....	1,225
Mass. Con.	25	100,000	....	....	....	....	7.60	....	7.25	....	7.00	6 50	6.50	....	560
Mayflower	25	100,000	....	....	....	....	....	....	....	....	2 50	....	3.00	....	215
Melones	10	167,577	....	....	....	....	....	....	....	....	....	....	....	....	....
Merced, g.	15	100,000	....	....	....	....	6.50	....	....	....	6.50	....	....	....	150
Michigan	25	100,000	5.25	5.00	....	....	5.00	....	....	....	5.50	5.00	4.88	....	280
Mohawk, c.	25	100,000	15 25	15.00	15 00	....	....	....	15.25	15.00	15.00	14.00	14.00	....	835
Montana C & C	5	100,000	8.00	....	7.50	....	....	....	....	....	7.50	....	....	....	115
N. A. Gold Dreg.	10	100,000	4.00	....	....	....	....	....	....	....	3 00	....	....	....	750
Old Colony	25	100,000	....	....	....	....	....	....	....	....	....	....	9.50	....	650
Old Dominion, c	25	150,000	18.00	16.50	18.00	17.00	18.00	17.00	17 00	....	17.13	16.75	17.25	17.00	1,801
Osceola, c.	25	93,000	67.00	66.00	67 00	66 00	66.00	65.00	....	....	66.00	64.00	64.50	64.25	731
Parrot, s & c.	10	229,380	44.50	43.00	44.00	42.50	42.50	42.00	42.50	41 50	40.75	37.75	40.50	39.25	5,234
Pioneer	10	100,000	....	....	....	....	....	....	....	....	.50	45	....	....	500
Quincy, c.	25	100,000	....	....	188	....	138	137¼	....	....	133	135	135	....	87
Rhode Island	25	100,000	....	....	4.75	....	....	....	4.88	....	....	....	....	....	65
Santa Fe, g. c.	10	250,000	5.50	5.00	....	....	....	....	....	....	5.00	....	5 00	4.88	678
San. Ysabel, g.	5	130,000	....	....	....	....	....	....	1.25	....	....	....	....	....	200
Tamarack, c.	25	60,000	....	....	182	....	....	....	....	....	175	172	175¼	....	95
Tecumseh	25	80,000	....	....	....	....	....	....	....	....	3 25	3.00	....	....	400
Tri Mountain	25	100,000	8 50	8.25	....	....	....	....	....	....	8.00	....	8.00	....	763
Union C. L.	25	80,000	....	....	....	....	....	....	....	....	2.00	....	....	....	350
United States	25	250,000	....	....	9.00	8.75	....	....	....	....	....	....	....	....	100
U. S. Oil	25	100,000	18.50	....	18.00	....	....	....	....	....	18 00	18.00	18 00	17.50	532
Utah Cons.g. c	5	3 0,000	28.50	28.07	28.25	....	29.00	28 50	29 00	....	28.50	28.00	27.50	....	1,665
Victor	5	200,000	....	....	....	....	....	....	....	....	....	....	....	....	....
Victoria	25	100,000	3.00	....	....	....	....	....	....	....	....	....	2.75	2 50	245
Washington	25	60,000	1.00	....	....	....	....	....	1.00	....	1.00	....	....	....	376
White Knob	100	80,000	....	....	19.50	....	20 00	....	....	....	....	....	....	....	400
Winona, c.	25	100,000	....	....	3 80	....	....	....	3.80	....	3 00	....	3.00	....	330
Wolverine, c.	25	60,000	....	....	40 00	....	40.00	....	40 00	39 25	39.00	....	39.00	38.00	626
Wyandotte	25	100,0 0	....	....	....	....	....	....	....	....	....	....	....	....	....

† Official quotations Boston Stock Exchange. Total sales, 83 033.

SALT LAKE CITY, UTAH.

May 5.

Stocks.	Shares.	Par val.	Bid.	Asked.	Stocks.	Shares.	Par val.	Bid.	Asked
Ajax	300,000	$10	$0.50	$0.60	Horn Silver	400,000	$25	$1 10	1.45
Alice	400,000	25	.35	.50	Joe Bowers	700,000	1	.06	.07¼
Buckeye	500,000	1	....	.04	Joe Bowers Ext.	440,000	1	.01	.01¼
Bullion-Beck & Ch.	100,000	10	2.50	3 05	Little Pittsburg	400,000	5	.00¾	.01
Centennial Eureka	200,000	25	22.00	25.00	Lower Mammoth	150,000	1	50½	.52
Chloride Point	500,000	1	.06¼	.10¾	Mammoth	400,000	5	2.22	2.23½
Daisy	500,000	1	....	.01¾	May Day	400,000	1	1 08	1.10
Dalton	500,000	5	....	....	Mercur	200,000	25	5 75	6.20
Dalton & Lark	2,500,000	1	.03	.10	Northern Light	400,000	5	.03¾	.07
Daly	150,000	20	1.45	1.70	Ontario	150,000	100	8.00	8.20
Daly West	150,000	20	19.00	19 18	Richmond-An.	500,000	1	.10	.20
Dexter	200,000	5	1 00	1.20	Sacramento	1,000,000	5	2¼	.23¾
Eagle	250,000	1	....	.04	Silver King	150,000	20	51.00	52.75
Eagle & Blue Bell	250,000	1	.93¾	.97	Star Consolidat'd	500,000	1	.07	.10
Four Aces	250,000	1	.03¾	.05¼	Sunbeam	250,000	1	.08¾	.09
Galena	100,000	10	.15	.80	Sunshine	250,000	10	.10	.12
Geyser-Marion	300,000	5	.05¾	....	Swansea	100,000	5	3.82	3.85
Golden Eagle	400,000	1	....	.04	South Swansea	150,000	1	1.22	1 28
Grand Central	250,000	1	5 91	6.03¾	Utah	100,000	1	.46	.90
Homestake	400,000	1	....	....	Valeo	200,000	10	1.08¼	1.09¾

TORONTO, ONT.

Name of Company.	Par val.	Apr. 30. B.	Apr. 30. A.	May 1. B.	May 1. A.	May 2. B.	May 2. A.	May 3. B.	May 3. A.	May 4. B.	May 4. A.	May 5. B.	May 5. A.	Sales
Ontario:	$1													
Alice A	1	.05	.07¾	.06¾	.08¾	.05¾	.06¾	.05¾	.07¾	.06¾	.08¾	.08¾	.09¾	12,600
Golden Star	1	.10¾	.12	.10¾	.12¾	.11¾	.13¾	.10¾	.12	.10¾	.12	.10¾	.12	4,500
Ham Reef	1	.17	.26	.20	.20	.20	.27	.20	.27	.20	.26	.20	.25	500
Olive	1													
British Col.:	1	.23¾	.24	.23¾	.29	....	....	.20	.28	.24	.28¾	.23	.26	333
Athabaska	1	.04¾	.06¾	.08¾	.07¾	.06¾	.08	.06	.07	.08¾	.07	.05¾	.06¾	11,500
Big Three	1	.93	1.00	.90	1 00	.90	1 00	.90	1.00	.92	1.00	.92	1.00	500
CaribooM'K	25	34.50	38.00	34.50	37 50	34.50	37.00	34.50	37.50	34 50	37 50	34.50	37.50	....
Crow's N. C.	1

STOCK QUOTATIONS.

COLORADO SPRINGS, COLO.†

Name of Company	Par val	Apr. 30. B.	Apr. 30. A.	May 1. B.	May 1. A.	May 2. B.	May 2. A.	May 3. B.	May 3. A.	May 4. B.	May 4. A.	May 5. B.	May 5. A.	Sales.
Acacia	1	.32½	.33	.....	.32	.30½	.31½	.32½	.33	.33½	.33½	.34½	.35	33,092
Alamo	1	.14½	.....	.14½	.....	.14½	.....	.14½	.....	.14½	.15	.14½	.15	2,000
Am. Con	1	.05½	.06	.05½	.06	.05½	.06	.05½	.06	.06	.06¼	.06	.06¼	6,060
Anaconda	1	.37½	.38	.36½	.37	.36	.38	.35	.37	.35	.....	.34½	.35	31,709
Anchor	1	.03½	.03½	.03½	.03½	.03½	.03½	.03½	.03½	.03½	.03½	.03½	.03½	.....
Anchorial	1	.75	.....	.75	.....	.75	.....	.70	.....	.75	.....	.75	.....	.....
Antelope	1	.....	.02½	.02½	.03	.02½	.03	.03½	.03½	.03½	.03½	.03½	.03½	38,000
Aola	1	.06	.06¼	.06	.06½	.06½	.06¼	.06½	.06½	.06½	.06¼	.06½	.06½	17,000
Arcadian	1	.01½	.....	.03½	.....	.05½	.....	.06½	.....	.06½	.....	.05½	.....	1,000
Arg'ntum J	1	.20	.20½	.19½	.20½	.20	.21	.20	.20½	.20	.21	.20½	.21	5,000
Banner	1	.14½	.01½	.04½	.04¾	.04	.04½	.04½	.01½	.04½	.04½	.04½	.04½	6,000
Battle Mt.C.	1	.29½	.30	.29½	.30	.30	.31½	.31½	.32	.30½	.31	.29½	.31½	10,000
Ben Hur	1	.06½	.07¼	.06½	.07½	.06½	.07½	.06½	.07¼	.07	.07¼	.06½	.07½	6,000
Black Bell	1	.11	.12½	.15	.18	.10½	.....	.11	.13	.....	.11	.....	.....	.....
Blue Bell	1	.12½	.13	.12½	.13	.12½	.13	.13	.13¼	.13	.13¼	.12½	.13¼	3,000
Bob Lee	1	.06½	.....	.06½	.....	.06½	.06¾	.06½	.06¾	.06½	.06¾	.06½	.06¾	73,000
Buckhorn	1	.06½	.06¾	.06¾	.07	.06½	.07¼	.07	.07¼	.06¾	.07¼	.07	.07¼	8,000
Cadillac	1	.01½	.....	.02	.02½	.01½	.02	.02	.02½	.02	.....	.02	.02½	5,000
Central C'r	1	.06	.06¾	.06½	.07	.06½	.06¾	.06½	.07	.....	.07	.06½	.07	.....
Champion	1	.07¾	.07½	.07¾	.07¾	.07½	.07¾	.07½	.07¾	.07½	.07¾	.07½	.07¾	12,000
Chicolo	1	.03½	.03½	.03½	.03¼	.03	.03¼	.03¼	.03¼	.03½	.03¼	.03½	.04½	9,000
C.K.&N	1	.02¼	.02½	.02½	.02¾	.02½	.....	.02½	.02¾	.02½	.02¾	.02½	.02¾	2,000
C.C.Col'bia	1	.06½	.06¾	.06	.06½	.06½	.....	.06	.06¾	.06	.06¾	.06½	.06¾	14,000
C.O G. Ext	1	.07¾	.07¾	.07¾	.08	.07	.08	.07¾	.08	.07¾	.....	.08	.08¾	11,000
C.C. & Man	1	.11	.11½	.11½	.11¾	.11½	.11¾	.11½	.11¾	.11½	.11¾	.11½	.11¾	41,400
Copper Mt	1	.04¾	.....	.05¾	.05½	.....	.05¼	.04¾	.05	.04¾	.05	.04½	.05	49,000
Creede&C	1	.14½	.15¼	.14	.15½	.15	.15½	.15½	.15¾	.14½	.15¼	.15	.15¼	12,800
C. C. Con	1	.13¾	.13½	.13½	.13¾	.15½	.13½	.13½	.13¾	.....	.....	.13¾	.....	6,000
Dante	1	.14½	.15	.14½	.15	.14½	.15	.15	.14¾	.14¾	.15¼	.14¾	.15	7,400
Des Moine	1	.06¾	.07	.06½	.07	.06½	.06¾	.06¾	.07	.06½	.06¾	.06½	.06¾	7,000
Eclipse	1	.08	.08¾	.07¾	.....	.08	.....	.....	.....	.09	.....	.08	.....	1,000
ElktonCon	1	1.31½	1.32	1.31	1.31½	1.31	1.31½	1.31½	1.32½	1.31½	1.32	1.32½	.....	20,719
El Paso G.	1	.33½	.40	.39	.40	.38½	.40	.38½	.....	.39	.39½	.39½	.....	5,600
Enterprise	1	.23½	.34½	.21	.32	.23½	.25½	.25	.25¾	.24½	.25	.23½	.24½	17,500
F.Rawling	1	.46	.50	.45½	.48	.46½	.....	.47	.....	.47½	.50	.46½	.50	2,500
Favorite	1	.02¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40,000
Findley	1	.15½	.15¾	.15¾	.16	.15½	.16	.15½	.15¾	.15	.....	.15½	.15¾	86,700
Garf. Con	1	.15	.19½	.17½	.20	.18	.19½	.18	.20	.17	.20	.17½	.18½	2,000
Golden Fl	1	.30	.....	.30	.....	.30	.....	.32	.....	.32	.....	.32	.....	1,000
Gold Hill	1	.03½	.03¾	.03½	.03¾	.03½	.03¾	.03¾	.03¾	.03½	.03¾	.03	.03½	32,000
Gold.Sov'n	1	.11½	.13½	.10½	.13½	.10½	.10¾	.10½	.10¾	.10½	.10¾	.10½	.10¾	8,000
Hayden	1	.01¾	.02	.02	.02¼	.02	.01¾	.02	.02¼	.02	.02¼	.02	.02¼	12,000
Ida May	1	.26	.....	.26½	.27	.26½	.28	.26½	.27¼	.26½	.27	.26½	.27	2,000
Indep'nde	1	.71¾	.71½	.71	.71¾	.71	.7 3/4	.71½	.72	.70¾	.71	.70¾	.71½	27,300
Ing. Con	½	.26½	.27	.26½	.26¾	.26	.26½	.25¾	.25½	.25½	.25¾	.25½	.25¾	140,259
Isabella	1	1.23¾	1.27½	1.24	1.24½	1.23	1.23	1.23½	1.24¾	1.26	1.26½	1.27½	1.27¾	46,800
Jack Pot	1	.67	.67¼	.67	.67¾	.67¼	.68¼	.67¼	.68¼	.68	.....	.67¼	.68	19,200
Josephine	1	.02¾	.03¾	.03¾	.04¾	.02¾	.....	.03¾	.03¾	.02¾	.03¼	.02¾	.02¾	11,000
Key West	1	.26	.....	.....	.....	.04	.01¾	.04	.04½	.03¾	.04	.03½	.04	9,000
Lexington	1	.16¼	.16¾	.16¾	.16¾	.16¼	.16½	.16½	.16¾	.16¾	.17	.16¾	.16¼	70,500
Magnet R.	1	.03¾	.05½	.09½	.03¾	.03¾	.03¾	.04	.03¾	.03¾	.03¾	.03¾	.03¼	12,500
Margaret	1	.03	.03¾	.03	.03¾	.03	.03¾	.03	.03¾	.03½	.03¾	.....	.....	17,000
Margery	1	.03½	.03½	.01¾	.0 3/4	.05¾	.05¾	.03¾	.0 3/4	.05½	.05¾	.05¼	.05½	10,000
Matoa	1	.28	.30	.29¾	.30	.29½	.30	.29¾	.31½	.30	.31	.31	.35	13,500
Midway	1	.06¾	.06½	.06¾	.06½	.06¾	.06½	.06½	.06¾	.06½	.....	.....	.16¼	12,000
M. J. T	1	.03¾	.04	.01¾	.04	.03½	.04	.04	.04½	.04¼	.04½	.04½	.04½	271,500
Mobile	1	.03¼	.03½	.03¼	.03½	.03¼	.03¾	.03¼	.03½	.03¼	.03¾	.03¼	.03½	4,000
Moll.Dwyer	1	.03½	.03¾	.03½	.03¾	.03½	.03¾	.03½	.03¾	.04	.03¾	.04	.04	57,000
Mollie Gib.	1	.24	.25	.24	.25	.24	.25	.24¼	.25	.24	.25	.24	.25	155
Monarch	1	.09½	.03¾	.08¾	.10	.08½	.09	.08¾	.09¼	.09	.09¼	.09	.09¼	19,000
Montreal	1	.08¾	.10	.09½	.09¾	.09	.09¼	.03¾	.....	.09	.....	.03½	.09	45,000
Moon-A'c'r	1	.....	.70	.65	.70	.64	.68	.65	.66	.63	.66	.62	.65	7,700
Morning S	1	.....	.03¾	.03½	.03¾	.03½	.03¾	.....	.04¼	.03¾	.04	.03½	.03¾	.....
Mtn.Beauty	1	.09¼	.09¾	.09½	.09¾	.09¼	.09¾	.09½	.09¾	.10¼	.10¼	.10½	.10¾	63,000
Mt. Rosa	1	.79	.....	.79½	.83	.75	.80	.....	.80	.73	.80	.77	.80	2,800
National	1	.08	.09½	.08	.09¼	.08½	.09¼	.08¾	.09¼	.09¼	.09¾	.09½	.09¾	14,500
Nellie V	1	.11¾	.11¾	.11¾	.11¾	.11½	.11¾	.11¾	.11¾	.11½	.11¾	.11¾	.13	9,000
New Haven	1	.08	.08¾	.08½	.09	.03¼	.08¾	.09¼	.08¾	.08¼	.08¾	.09¼	.09½	47,000
OliveB'nch.	1	.07	.07¾	.07	.07¼	.07¾	.....	.07¼	.07¼	.07½	.07¼	.07½	.07¾	5,000
Oriole	1	.04	.....	.04¼	.04¾	.04½	.04¾	.04¾	.05	.04¾	.05	.04¾	.05	3,000
Orphan	1	.20	.23	.22	.23	.21	.23	.20	.23	.20	.23	.20¾	.23¾	5,000
Pelican	1	.03¾	.03	.02¾	.03	.03¼	.03	.03¼	.03¾	.03¼	.03¾	.03	.03¼	14,000
Pharmacist	1	.14½	.12¾	.12¼	.12¾	.14	.12½	.12¾	.12¾	.12¾	.12¾	.13¾	.....	12,500
Pilgrim	1	.13	.13¾	.13¼	.13½	.13	.13¾	.12¾	.....	.13	.14	.13¾	.14	11,000
Pinnacle	1	.20	.20¼	.20	.21	.20¼	.....	.20¾	.21	.21	.....	.....	.....	5,500
Portland	1	2.65	2.70	2.76	2.79	2.78	2.80	2 76	2.80	2.72	2.78	2 70	2.75	9,950
Prince Alb.	1	.04	.04½	.04¼	.04¾	.04¼	.04¾	.04¼	.04¾	.04¼	.04¾	.04	.04½	68,500
Princess	1	.05¾	.05¾	.06¼	.05¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.06¾	.07	15,000
Progress	1	.05¾	.06¾	.06	.07	.06¾	.06	.06¾	.06¾	.06	.06	.06	.06¾	6,000
Pythias	1	.06¼	.06¾	.06	.06¼	.06¾	.06¼	.06¼	.06¾	.05¾	.....	.05¾	.06¾	6,000
Raven	1	.67	.68	.68	.....	.67	.63	.67	.68	.67	.....	.67½	.68	4,800
Republic	1	.07	.07¼	.06¾	.07¼	.06¾	.07¼	.06¾	.07¼	.07	.07¼	.07	.07½	10,000
Rob't Burns	1	4.05	.05¼	.05	.....	.05	.05¼	.04¾	.05¼	.04¾	.05½	.05	.05½	5,000
Rose Maud.	1	.10¾	.10¾	.10¼	.10¾	.10	.10¾	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾	58,000
Rose Nicol	1	.13¼	.13¾	.13¼	.13¾	.13¾	.14	.13¾	.14	.13¾	.13¾	.13¼	.14	82,500
Silver Gold.	1	.01¾	.01¾	.01¾	.....	.01¼	.01¾	.01¼	.01¾	.01¾	.01¾	.01¼	.01¾	.....
Specimen	1	.18	.18½	.18	.18½	.13¾	.13¾	.13½	.....	.13¾	.....	.13½	.13¾	488,500
Tornado	1	.47	.47¾	.47	.47¾	.47	.47¾	.47	.47¾	.47	.47¾	.47	.47¾	8,000
Touraine	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trachyte	1	.07¼	.07¾	.07¼	.07¾	.07¼	.07¾	.07¾	.07¾	.....	.....	.07	.07¾	5,000
Uncle Sam	1	.04½	.05	.04¾	.05	.05	.....	.05	.05¾	.....	.....	.05	.05¾	9,000
Union	1	.46	.49½	.....	.49	.....	.49	.46¾	.49	.47	.48	.46½	.48	1,500
Vindicator	1	.....	1.58	.....	1.56	.....	1.56	1.42	1 56	1.50	1.53½	1 50	1.52	4,000
Work	1	.34½	.34¾	.33¾	.34¼	.34½	.34¾	.34¼	.34¾	.34½	.34¾	.34	.34½	18,000
Zenobia	1	.....	.16¾	17	.17½	17	.17½	.....	.18¾	.18	.18¾	.18½	.....	14,000

† Colorado Springs Mining Stock Exchange. Total sales, 2,418,765 shares.

MONTREAL, CANADA.*

Name of Company.	Par Val	Week, May 7. H.	Week, May 7. L.	Sales.	Name of Company.	Par Val	Week, May 7. H.	Week, May 7. L.	Sales.
Big Three	$1	.06¾	.05½	7,000	Monte Christo	$1	.05	.03	5,000
California	1	.16¼	.09¼	3,500	Montreal G. P.	1	.05¾	.05	500
Can. Gold Fields	0.10	.08	.06	2,500	Montreal-London	0.24	.31¾	.29	10,190
Decca	1	.08	.06	9,500	Okanogon	1	.....	.....	.....
Deer Trail Con	1	.09¼	.07	111,500	Payne	1	1.80	1.18	1,000
Giant	1	.....	.....	.....	Rambler-Cariboo	1	1 31	14	.....
Golden Star	1	.10	.06	12,000	Republic Con	1	1 08	1.00	.....
Gold Hills Dev	1	.05	.02	.....	Slocan-Sovereign	1	.32	.24	3,000
Knob Hill	1	.60	.40	1,500	Virtue	1	1.17	1.08	20,200
Majestic	1	.....	.....	.....					

*Montreal Stock Exchange. Total sales, 187,390 shares.

MEXICO.

Apr. 28.

Name of Company.	No. of shares.	Last div'd.	Prices. Op'g	Prices. Cl'g.	Name of Company.	No. of shares.	Last div'd	Prices. Op'g.	Prices. Cl'g.
Durango:					Hidalgo:				
Barradon y Cab	2,400	.....	$40	$40	Real del Monte	2,554	10.00	506	500
Candelaria de Pan.	1,200	.....	30	20	San Francisco Ho	6,000	3.00	170	145
Capuzaya Guan	2,400	.....	15	30	Soledad	960	5.00	280	270
Restauradora	10,000	.....	20	10	Sorpresa	980	7.50	300	290
Guanajuato:					Union Hacienda	2,000	5.00	290	250
Angustias	2,400	5.00	280	300	Mexico:				
Cinco Senores y An	2,000	15.00	360	355	Coronas	500	.....	75	75
Guadalupe Hacie'a	10,000	2.00	205	200	Esperanza y An	3,000	10.00	1,480	1,460
Trinidad, aviadora	2,000	.....	15	6	Michoacan:				
do. aviada	400	.....	15	10	Luz de Borda ava	4,000	.....	22	18
Zona Minera de Pos	2,400	.....	6	8	S. Luis Potosi:				
Hidalgo:					Concep. y An	2,400	.....	225	240
Amistad y Concord	9,600	1.47	22	20	Zacatecas:				
Arevalo	720	.....	200	200	Asturiana y An	2,500	10.00	140	140
Bartolome de Med.	2,000	2.00	65	70	Cabezon	2,400	.....	15	15
Carmen	1,100	7.75	200	250	C'delar. de Pinos	2,500	.....	240	230
Luz Ca Maravillas	800	.....	120	100	Palma de Somb	2,400	.....	40	50
Pabellon	800	27.50	30	30					

DENVER, COLO.‡

Name of Company.	Par val.	Apr. 28. B.	Apr. 28. A.	Apr. 30. B.	Apr. 30. A.	May 1. B.	May 1. A.	May 2. B.	May 2. A.	May 3. B.	May 3. A.	May 4. B.	May 4. A.	Sales.
Acacia	1	.80	.81	.....	.....	.82½	.83	.83½	.84½	.84	.87	.83	.....	1,000
Anaconda	1	.....	.....	.36	.39	.....	.....	.86	.87½	.84½	.87	.85	.86	1,000
Arg. J.	1	.....	.....	.....	.....	.....	.....	.....	.21	.....	.....	.....	.20¾	.....
Bankers	1	.20¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
C. C. Bull'n	1	.02	.02½	.02	.02¼	.....	.....	.02	.02½	.....	.....	.....	.02½	.....
Dictator	1	.02¾	.03	.02½	.03	.....	.03	.02¾	.03	.....	.....	.....	.....	.....
Enterprise	1	.24	.25	.....	.....	.....	.....	.22¾	.24¾	.....	.....	.....	.....	.....
Favorite	1	.02½	.03¾	.02½	.02¾	.02½	.02¾	.02¾	.03	.....	.....	.....	.25½	2,000
Gilpin&C.C	1	.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.03½	.04¾	4,000
GraniteHill	1	.....	.....	.05¼	.05½	.....	.....	.05	.05¼	.05	.05½	.....	.....	.....
Indepen'ce	1	.72	.....	.72	.73	.71	.72	.71¼	.72	.71	.72	.....	.....	2,000
Ing. Con	1	.....	.25¾	.25¾	.26¼	.26¼	.27	.25¾	.26¾	.....	.....	.....	.....	5,000
Isabella	1	1.27	1.29	1.27	1.28	.....	.....	1.28	.....	.....	.....	.2 3/4	.25½	1,000
Key West	1	.04½	.04¾	.04	.04¾	.....	.....	.....	.04¾	.....	.....	1.25¼	1.26½	.....
Mt. Beauty	1	.....	.....	.09	.05¾	.....	.....	.....	.....	.....	.....	.....	.....	1,000
New Haven	1	.08¾	.08¾	.08½	.08¾	.....	.08¾	.08¾	.....	.....	.....	.09¼	.09¾	1,000
New Zeal'd	1	.41	.50	.42	50	.40	.46	.....	.45¾	.40	.47¾	.....	.47	.....
Ophir	1	.67½	.70	.65¼	.68	.63	.64	.63¾	65	.63	.....	.....	.....	8,000
Puritan	1	.01½	.01¾	.01½	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.01¾	.....
Rose Nicol	1	.....	.....	.....	.....	.13¾	.....	.14	.....	.....	.....	.....	.....	.....
Specimen	1	.....	.....	.13½	.....	.12¾	.13	.....	.....	.13¾	.14¾	.13¾	.13¾	.....
Union	1	.47	.....	.....	.49	.47	.49	.47	.49	.47	.48¾	.....	.....	.....
Va M	1	.....	.....	.08¾	.09¼	.....	.....	.....	.....	.....	.....	.01	.01¼	24,000
Wire Gold	1	.01	.....	.01	.01½	.01	.....	.....	.....	.01	.01¼	.01	.01¼	

‡ Official Quotations Denver Stock Exchange. Total sales, 49,000 shares.

PARIS.

Apr. 19.

Name of Company.	Country.	Product.	Capital Stock.	Par value.	Latest divs.	Prices. Op'ning.	Prices. Closing.
			Francs.	Fr.	Fr.	Fr.	Fr.
Acieries de Creusot	France	Steel mfrs.	27,000,000	2,000	75.00	1,980.00	1,980.00
" " Firminy	"	" "	3,000,000	500	125.00	3,790.00	3,810.00
" " Fives-Lille	"	" "	12,000,000	500	35.00	564 00	56 .00
" " Nati'n-Bank	Russia	Iron & steel	.....	500	.....	4,900.00	4,900.00
" " la Marine	France	Steel mfrs.	20,000,000	500	50.00	1,820 00	1,850.00
Anzin	"	Coal	.....	.....	220.00	6,950.00	6,990.00
Boleo	Lower Cal.	Copper	.....	500	1.07	3,219.00	3,680.00
Briansk	Russia	Coal & Iron	.....	500	.....	1,310.0	1,300.00
Champ d'Or	S. Africa	Gold	3,875,000	25	3.75	36.25	36 10
Courrieres	France	Coal	600,000	300	70.00	3,070.0	3,094.00
Dombrowa	Russia	Coal	.....	500	12.50	1,100.00	1,111.00
Donetz	"	Steel	.....	.....	.....	1,178 00	1,185.00
Dynamite Centrale	France	Explosives	.....	500	30.00	46 .00	464.00
Escombrera-Bleyberg	Spain	Lead	.....	500	85.00	1,315 00	1,310 00
Fraser River	Brit. Col'mb	Gold	250,000	25	.....	12.50	12 25
Huanchaca	Bolivia	Silver	40,000,000	125	5.00	176 00	170.00
Laurium	Greece	Zinc & lead	16,800,000	500	30.00	609.0	605.00
Malfidano	Italy	Zinc	12,500,000	500	50.00	1,360.00	1,370.00
Metaux, Cie. Fran. de	France	Metal d'iers	25,000,000	500	30.00	510.0	501.00
Mokta-el-Hadid	Algeria	Iron	18,312,500	500	40.00	1,225.0	1,225 00
Napthe Baku	Russia	Petroleum	.....	.....	.....	816.00	823.00
Napthe, Le	"	"	.....	.....	.....	1,300.00	1,310.00
Napthe Nobel	"	"	.....	.....	.....	687.50	688.50
" parts	"	"	.....	.....	.....	13,700.00	13,750.00
Nickel	N. Cal'd'nia	Nickel	10,000,000	250	10.00	520.0	521.00
Penarroya	Spain	Coal, etc	.....	500	65.00	2,820 00	2,810.00
Rebecca	Colo'do, U.S.	Gold	5,000,000	25	.....	4.75	4.50
Salines de l'Est	France	Salt	.....	500	6.50	220.00	210.00
Salines du Midi	France	" etc	.....	500	25.00	1,040.00	1,040.00
Vielle Montagne	Belgium	Zinc	9,000,000	80	56.00	845.00	841.25

LONDON.

Apr. 27.

Name of Company.	Country.	Authorized capital.	Par value.	Last dividend. Amt.	Last dividend. Date.	Quotations. Buyers	Quotations. Sellers.
				£ s. d.	s.d.	£ s. d.	£ s. d
Alaska Goldfields	Alaska	£300,000	1 0 0	0 2 1	Mar., 1899	18 9	1 1 3
Alaska-Mexican, f	"	300,000	1 0 0	0 0 4.8	May, 1900	1 0	1 1 6
Alaska Treadwell, g	"	1,000,000	5 0 0	1 6	"	4 15 0	5 0 0
Anaconda, c., s	Montana	6,000,000	5 0 0	8 2	Apr., 1900	10 2 6	10 7 6
Chiapas, g., s., c	Mexico	252,500	1 0 0	.....	.....	5 0	7 0
De Lamar, g., s	Idaho	400,000	1 0 0	6	May, 1900	2 6	3 0
Elkhorn Priority (New), s	Colorado	87,500	1 0 0	2 0	June, 1898	1 3	1 9
Golden Gate, g	California	80,000	1 0 0	.....	.....	1 0	2 0
Grand Central, g., s	Mexico	300,000	1 0 0	2 0	Jan., 1900	15 0	17 6
Hall Mines, c., s	British Col.	300,000	1 0 0	1 0	May, 1899	1 0	2 0
Le Roi, g	"	1,000,000	5 0 0	5 0	Nov., 1899	6 0 0	6 5 0
Lillie, g	Colorado	250,000	1 0 0	2½	Apr., 1900	15 0	1 0 0
Montana, g., s	Montana	660,000	1 0 0	6	Apr., 1899	3 6	4 0
Newfoundland, c	Newfoundland	250,000	1 0 0	.....	.....	5 0	10 0
Palmarejo & Mexican, g	Mexico	700,000	1 0 0	.....	.....	2 0	3 0
*Pandora Con	Colorado	1,100,000	1 0 0	2 0	Mar., 1900	2 17 6	3 0 0
Pataxo, c	Chile	200,000	2 0 0	4 0	Dec., 1899	4 5 0	4 10 0
Frontino & Bolivia, g	Colombia	140,000	1 0 0	1 6	Oct., 1899	1 11 3	1 13 9
St. John del Rey, g	Brazil	600,000	1 0 0	1 0	Dec., 1899	1 7 6	1 10 0
(UtahCon. g (HighlandBoy	Utah	800,000	1 0 0	rts.	Mar., 1899	6 2 6	6 7 6
Velvet, g	BritishCol'mbia	100,000	1 0 0	.....	.....	1 0 0	1 2 6
Ymir, g	"	300,000	1 0 0	1 0	Nov., 1899	1 10 0	1 12 6
British Am. Corp	"	1,500,000	1 0 0	2 0	Mar., 1900	14 0	15 6
Linares, l	Spain	45,000	3 0 0	15 0	Mar., 1900	9 0 0	10 0 0
Mason & Barry, c., sul	Portugal	420,000	2 0 0	10 0	Apr., 1900	4 12 6	4 17 6
*Rio Tinto, c	Spain	1,625,000	5 0 0	45 0	Apr., 1900	58 17 6	59 2 6
" pref	"	1,625,000	5 0 0	2 6	" 1900	6 5 0	6 10 0
Tharsis, c	"	1,250,000	2 0 0	15 0	Apr., 1900	9 12 6	9 17 6
Assoc. Gold Mines	W. Australia	500,000	1 0 0	1 6	Jan., 1900	5 0 0	5 12 6
*Broken Hill Prop., s	N.S. Wales	384,000	8 0 0	1 0	Apr., 1900	2 6 6	2 7 6
*Great Boulder Prop	W. Australia	175,000	2 0 0	6	Apr., 1900	1 11 6	1 12 6
Hannan's Brownhill, g	"	140,000	1 0 0	7 6	May, 1900	9 12 6	9 17 6
*Ivanhoe Gold Corp	"	1,000,000	5 0 0	5 0	Apr., 1900	18 17 6	19 2 6
Kalgurlie, g	"	120,000	1 0 0	rts.	Oct., 1899	7 8 9	7 11 3
*Lake View Consols, g	"	250,000	1 0 0	10 0	Apr., 1900	18 8 9	18 11 3
Mt. Lyell M. & R., l., c	Tasmania	300,000	3 0 0	5 0	Apr., 1900	9 0 0	9 5 0
Mt. Morgan, g	Queensland	1,000,000	1 0 0	7	Apr., 1900	5 1 3	5 3 9
Waihi, g	New Zealand	120,000	1 0 0	2 6	Apr., 1900	9 10 0	9 12 6
Champion Reef, g	Colar Fields	250,000	10	4 0	May, 1900	6 8 9	6 6 3
Mysore Gold, g	"	250,000	10	5 6	Mar., 1900	6 3 9	6 6 3
Nundydroog, g	"	242,000	1 0 0	2 6	Mar., 1900	3 8 9	3 11 3
*Ooregam, g	"	145,000	1 0 0	2 0	Apr., 1900	3 16 3	3 18 9
" *pref. g	"	130,000	1 0 0	2 0	" 1900	4 17 6	5 2 6
British S. Af., chartered	So. Africa	5,000,000	1 0 0	rts.	May, 1900	2 10 0	2 15 0
Cape Copper, c	"	600,000	1 0 0	15 0	Jan., 1900	6 2 6	6 7 6
" pref	"	150,000	2 0 0	15 0	" 1900	5 16 0	6 0 0
City & Suburban (New), g	Transvaal	1,960,000	4 0 0	8 0	Aug., 1899	4 10 0	4 15 0
Con. Deep Level, g	"	200,000	1 0 0	x all.	June, 1898	1 2 6	1 7 0
Crown Reef, g	"	120,000	1 0 0	18 0	Nov., 1899	12 5 0	12 15 0
De Beers Con., d	Cape Colony	3,950,000	5 0 0	21	Sept., 1899	27 15 0	28 0 0
Ferreira, g	Transvaal	90,000	1 0 0	20

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Authorized Capital Stock.	Shares Issu'd No.	Par Val	Dividends. Paid, 1900.	Total to Date.	Latest. Date.	Amt.
1	Acacia, g.	Colo.	$1,500,000	1,500,000	$1				
2	Etna Con., q.	Cal.	500,000	100,000	5	$30,000	$225,000	April 1900	.15
3	Alabama Coal & Iron, pf	Ala.	2,500,000	25,000	100	87,500	87,500	May. 1900	1.75
4	Alamo, g.	Colo.	1,000,000	1,000,000	1				
5	Alaska-Mexican, g.	Alask	1,000,000	180,000	5	18,000	447,081	Jan. 1900	.10
6	Alaska-Treadwell, g.	Alask	5,000,000	200,000	25	75,000	4,295,000	Jan. 1900	.37½
7	Alice, g. s.	Mont.	10,000,000	400,000	25		1,075,000	April 1898	.05
8	Alliance, g.	Colo.	500,000	450,000	1		31,500	Dec. 1899	.07
9	Amalgamated, c.	Mont.	75,000,000	750,000	100	3,000,000	4,500,000	April 1900	2.00
10	Amazon, g.	Colo.	600,000	600,000	1	42,000	62,000	Mar. 1900	.05
11	American Coal	Md.	1,500,000	60,000	25	75,000	802,500	Mar. 1900	1.25
12	American Gold, g. s. c. l.	Colo.	3,000,000	300,000	10		446,000	Dec. 1899	.04
13	Amer. Sm. & Ref., pref.	U. S.	32,500,000	325,000	100	1,263,925	1,832,675	April 1900	2.14
14	Am. Steel & Wire, pf.	U. S.	40,000,000	400,000	100	1,400,000	4,200,000	April 1900	1.75
15	Am. Steel & Wire, com.	U. S.	50,000,000	500,000	100	875,000	875,000	April 1900	1.75
16	American Zinc	Kas.	500,000	5,000	100	15,000	35,000	Mar. 1900	1.00
17	Am. Zinc, Lead & Sm.	Mo.	2,500,000	60,000	25	60,000	180,000	Jan. 9001	1.00
18	Anaconda Copper	Mont.	30,000,000	1,200,000	25	2,400,000	14,550,000	April 1900	2.00
19	Anchoria-Leland, g.	Colo.	600,000	600,000	1		198,000	April 1899	.03
20	Anglo-Mexican, g.	Mex.	2,001,625	400,230	5		1,728,993	Dec. 1898	.24
21	Apollo Con., g	Alask	1,000,000	100,000	10	70,000	210,000	Jan. 1900	.07
22	Appie Ellen, g.	Colo.	600,000	600,000	1		25,000	Aug. 1898	.01
23	April Fool	Nev.	500,000	500,000	1		16,000	Oct. 1899	.01
24	Argentum-Juniata, g.	Colo.	1,300,000	650,000	2		156,000	Oct. 1895	.03
25	Argonaut	Cal.	2,000,000	200,000	10	50,000	470,000	Mar. 1900	.05
26	Arizona Copper	Ariz.	3,190,550			421,153	1,309,572	Mar. 1900	1.32
27	Associated, g.	Colo.	1,250,000	1,250,000	1		84,000	Feb. 1899	.01
28	Atlantic, c.	Mich.	1,000,000	40,000	25	80,000	860,000	Feb. 1900	2.00
29	Aurora, l.	Mich.	2,500,000	100,000	25		890,000	June. 1899	.50
30	Bald Butte	Mont.	250,000	250,000	1		769,648	Dec. 1899	.03
31	Bankers, g.	Colo.	1,250,000	1,250,000	1				
32	Bankok Cora Belle, s.	Colo.	600,000	600,000	1		107,510	July. 1896	.01
33	Battle Mtn. Con., g.	Colo.	2,500,000	2,500,000	1				
34	Big Four, g.	Colo.	1,000,000	1,000,000	1				
35	Big Seven, g.	Cal.	100,000	100,000	1		6,000	April 1898	.03
36	Big Six, g. s.	Colo.	500,000	500,000	1		15,000	May. 1898	.00½
37	Boston-Aurora, pref.	Mo.	800,000	32,000	25	21,120	50,160	April 1900	.17
38	Boston & California	Cal.	600,000	600,000	1		72,000	June. 1899	.06
39	Boston & Colo. Smelting	Colo.	750,000	15,000	50	22,500	292,500	April 1900	.75
40	Boston Duenweg, z.	Mo.	1,000,000	40,000	10	16,000	48,000	April 1900	.10
41	Boston Get There, z.	Mo.	250,000	22,500	10	9,000	20,250	April 1900	.10
42	Boston-Little Circle, z.	Mo-K.	1,000,000	100,000	10	40,000	120,000	April 1900	.10
43	Boston & Mont. Con.	Mont.	3,750,000	150,000	25	2,700,000	17,200,000	May. 1900	10.00
44	Boston Providence, z.	Mo.	150,000	15,000	10	3,000	10,500	April 1900	.05
45	Boston, q.	Cal.	1,000,000	100,000	10	10,000	20,000	Jan. 1900	.10
46	Boston Sunflower, z.	Mo.	150,000	15,000	10		4,500	Oct. 1899	.30
47	Breece, i.	Colo.	5,000,000	200,000	25	10,000	80,000	Feb. 1900	.05
48	Buffalo Hump, g.	Idaho	2,500,000	250,000	10	100,000	100,000	May. 1900	.10
49	Bullion-Beck & Champ.	Utah.	1,000,000	100,000	10	40,000	2,478,400	April 1900	.10
50	Bunker Hill & Sullivan.	Idaho	3,000,000	300,000	10	84,000	885,000	April 1900	.07
51	Calumet & Hecla, c.	Mich.	2,500,000	100,000	25	2,000,000	68,850,000	Mar. 1900	20.00
52	Cambria Steel	Pa.	16,000,000	320,000	50	160,000	1,280,000	Feb. 1900	.50
53	Cariboo-McKinney, g.	B.Col	800,000	800,000	1		311,965	June. 1899	.01½
54	Centen-Eureka, g. s. l. c.	Utah.	5,000,000	100,000	25	117,700	2,267,700	April 1900	1.00
55	Central Lead, l.	Mo.	1,000,000	10,000	100	20,000	162,000	April 1900	.50
56	Champion, g. s.	Cal.	340,000	34,000	10		321,700	Nov. 1899	.25
57	Charleston, p. r.	S. C.	1,000,000	10,000	100		200,000	June. 1899	2.00
58	Cloverdale, z.	Mo.	1,000,000	100,000	10	30,000	30,000	April 1900	.20
59	Colonial, l.	Mo.	1,000,000	1,000,000	1		180,000	Aug. 1899	.01
60	Colorado Smelting	Mont.	1,000,000	100,000	10		1,945,000	Jan. 1899	1.00
61	Commodore	Colo.	1,200,000	1,200,000	1		432,000	Jan. 1899	.04
62	Commonwealth, z., pref.	Mo.	500,000	100,000	5	20,000	40,000	April 1900	.05
63	Consolidated Gold Mines	Colo.	1,000,000	1,000,000	1	30,000	40,000	April 1900	.01
64	Consolidation Coal	Md.	10,250,000	102,500	100	205,000	5,921,650	Feb. 1900	2.00
65	Cons. Zinc & Lead, pf.	Mo.	400,000	400,000	1	8,000	8,000	Jan. 1900	.20
66	Continental, z.	Mo.	1,500,000	150,000	10				
67	Cordell, z. l.	Mo.	300,000	60,000	5	3,000	9,000	April 1900	.05
68	Cripple Creek Con.	Colo.	2,000,000	2,000,000	1	160,000	160,000	Mar. 1900	.08
69	Croesus, g.	Cal.	1,000,000	190,000	5	22,800	71,800	April 1900	.06
70	Crowned King, g. s. l.	Ariz.	6,000,000	600,000	10		242,760	May. 1899	.02
71	Dalton & Lark, g. s. l.	Utah.	2,500,000	2,500,000	1		87,500	Mar. 1896	.00½
72	Daly	Utah.	3,000,000	150,000	20		2,925,000	Mar. 1897	.25
73	Daly West	Utah.	3,000,000	150,000	20	187,500	307,500	April 1900	.25
74	Damon, g.	Colo.	2,000,000	2,000,000	1				
75	Deadwood-Terra, g.	S. D.	5,000,000	200,000	25		1,350,000	May. 1898	.15
76	Deer Trail Con.	Wash	3,000,000	3,000,000	1		55,000	Dec. 1899	.00½
77	De Lamar, g. s.	Idaho	2,000,000	400,000	5		2,346,000	May. 1899	.12
78	Della S., g.	Colo.	1,000,000	1,000,000	1		60,000	Jan. 1897	.01
79	Delta, l. z.	Mo.	100,000	100,000	1	3,580	7,680	April 1900	.01
80	Dixie, g.	Utah.	125,000	125,000	1	10,000	10,000	April 1900	.02
81	Doe Run, l.	Mo.	500,000	5,000	100	10,000	100,000	April 1900	.50
82	Dutch, g.	Cal.	1,500,000	130,000	10		39,000	Feb. 1898	.05
83	Eldorado, g.	Cal.	1,000,000	100,000	10		10,000	July. 1899	.10
84	Elkhorn, New, s. l.	Colo.	437,500	87,500	5		1,325,000	June. 1898	.48
85	Elkton Con., g.	Colo.	1,250,000	1,125,000	1	33,750	754,461	Mar. 1900	.03
86	El Paso, g. s.	Colo.	900,000	900,000	1		12,393	Jan. 1898	.01
87	Empire State-Idaho	Idaho	1,000,000	98,514	10	118 217	436,255	April 1900	.30
88	Enterprise, s. l.	Colo.	500,000	500,000	1		900,000	Sept. 1898	.05
89	Fanny Rawlings, g. s.	Colo.	1,000,000	1,000,000	1		20,000	Aug. 1899	.01
90	Favorite, g.	Colo.	1,200,000	1,200,000		48,000	48,000	April 1900	.04
91	Federal Steel, pf.	U. S.	100000,000	532,610	10.	3,195,660	4,793,520	April 1900	3.00
92	Federal Steel, com.	U. S.	100000,000	464,843	100	1,743,161	1,743,161	Mar. 1900	2.50
93	Fern, g.	B.Col	200,000	200,000	1		10,000	Jan. 1898	.05
94	Ferris-Haggarty, c.g.s.	Wyo.	1,000,000	1,000,000	1		5,000	Feb. 1899	.00½
95	Findley, g.	Colo.	1,250,000	1,250,000	1				
96	Florence, s.	Mont.	2,500,000	440,000	5	22,000	252,000	April 1900	.05
97	Frisco Con., l. s.	Idaho	2,500,000	500,000	5		920,000	Nov. 1899	.25
98	Galena, s. l. g.	Utah.	1,000,000	100,000	10		71,000	Sept. 1897	.05
99	Garfield Con., g.	Colo.	1,200,000	1,200,000	1		34,000	May. 1899	.01
100	Geyser-Marion, g.	Utah.	1,500,000	300,000	5		96,000	Sept. 1898	.02
101	Gold Coin of Victor, g.	Colo.	1,000,000	1,000,000	1	80,000	440,000	April 1900	.02
102	Gold Deposit, g.	Colo.	500,000	500,000	1	10,000	10,000	Mar. 1900	.02
103	Gold & Globe, g.	Colo.	750,000	750,000	1		51,625	July. 1898	.00½
104	Gold King, g.	Colo.	1,000,000	1,000,000	1	30,000	120,000	Jan. 1900	.03
105	Gold Sovereign, g.	Colo.	3,000,000	3,000,000	1				
106	Golden Cycle, g.	Colo.	1,000,000	200,000	5	40,000	298,500	April 1900	.05
107	Golden Eagle, g.	Colo.	500,000	500,000	1		20,000	Nov. 1899	.01
108	Golden Fleece, g. s.	Colo.	600,000	600,000	1		569,480	Feb. 1897	.01
109	Golden Reward, g.	S. D.	1,000,000	100,000	10		155,000	Feb. 1898	.15
110	Golden Star, g.	Ont.	1,200,000	1,200,000	1		45,500	July. 1899	.00½
111	Gould, g.	Colo.	1,000,000	1,000,000	1				
112	Grafton, g.	Colo.	1,000,000	1,000,000	1		10,000	Oct. 1899	.01
113	Grand Central, g.	Utah.	250,000	250,000	1		666,250	Sept. 1899	.24
114	Grand Gulch	Ariz.	250,000	240,000	1	9,600	9,600	April 1900	.01
115	Grass Valley Expl	Cal.	100,000	30,000	2	30,000	60,000	April 1900	.25
116	Gwin, g.	Cal.	1,000,000	100,000	10		86,500	Sept. 1899	.25
117	Hall Mines, Ltd.	B. Col	1,500,000	250,000	5		120,000	May. 1899	.24
118	Hecla Con.	Mont	1,500,000	30,000	50		2,190,000	Dec. 1898	.50
119	Hidden Treasure, g.	Cal.	500,000	360,000	1		3,600	July. 1899	.01
120	Holy Terror, g.	S. D.	500,000	500,000	1	15,000	187,000	April 1900	.01
121	Home, g.	Colo.	50,000	50,000	1	50,000	50,000	May. 1900	1.00
122	Homestake, g.	S. D.	21,000,000	210,000	$100	$420,000	$8,563,750	April 1900	.50
123	Horn-Silver, g. s. c. sp. l.	Utah.	10,000,000	400,000	25		5,250,000	Mar. 1899	.05
124	Ida May, g.	Colo.	500,000	500,000	1				
125	Idaho	Idaho	1,000,000	1,000,000	1	8,188	8,188	April 1900	.01
126	Idaho, s. l.	B.Col	500,000	500,000	1		292,000	Jan. 1899	.05
127	Independence Town & M	Colo.	1,250,000	1,250,000	1	37,500	50,000	May. 1900	.01
128	International, z.	Mo.	1,000,000	1,000,000	1	21,000	21,000	May. 1900	.01
129	Iowa, g. s. l.	Colo.	1,666,667	1,666,667	1	7,500	97,500	Jan. 1900	.00¾
130	Iron Mountain, g. s. l. i.	Mont.	5,000,000	500,000	10		507,500	April 1898	.02
131	Iron Silver, s l.	Colo.	10,000,000	500,000	20		2,500,000	April 1889	.20
132	Isabella, g.	Colo.	2,250,000	2,250,000	1	67,500	607,500	Mar. 1900	.03
133	Jack Pot, g.	Colo.	1,250,000	1,250,000	1		75,000	Dec. 1899	.06
134	Jamison	Cal.	3,900,000	390,000	10		50,700	April 1899	.10
135	Keystone, g.	Colo.	1,500,000	1,500,000	1		35,000	Mar. 1894	.01½
136	Klondike Bonanza, Ltd.	Klond	750,000	52,750	5		12,000	Aug. 1899	.24
137	Lake Superior Iron.	Mich.	2,100,000	84,000	25		2,132,000	Feb. 1899	1.00
138	Last Chance, s. l.	B. Col	500,000	500,000	1		45,000	Apr. 1899	.05
139	Last Dollar, g.	Colo.	1,500,000	1,500,000	1	30,000	60,000	Feb. 1900	.02
140	Le Roi, g.	B. Col	5,000,000	200,000	5		1,305,000	Nov. 1899	1.20
141	Lexington, g.	Colo.	1,500,000	1,500,000	1				
142	Lillie, g.	Colo.	1,250,000	250,000	5	45,117	349,300	April 1900	.05
143	Little Tiger, g.	Cal.	500,000	500,000	1	15,000	47,500	Feb. 1900	.01½
144	Mammoth, g. s. c.	Utah.	10,000,000	400,000	25	80,000	1,690,000	April 1900	.10
145	Marion Con.	Colo.	5,000,000	500,000	10		300,000	May. 1899	.01
146	Mary McKinney, g.	Colo.	1,000,000	1,000,000	1	90,000	120,000	April 1900	.06
147	Maryland Coal, pf.	Md.	1,885,005	18,850	100		546,619	Dec. 1899	3.00
148	Matoa, g.	Colo.	1,000,000	1,000,000	1		25,000	Dec. 1898	.02½
149	Mercur, g.	Utah.	5,000,000	200,000	25	75,000	1,441,000	April 1900	.12½
150	Missouri Zinc Fields, pf.	Mo.	400,000	16,000	25	16,573	31,885	April 1900	.16
151	Modoc, g. s.	Colo.	500,000	500,000	1	20,000	165,000	April 1900	.01
152	Mollie Gibson, s. l.	Colo.	5,000,000	1,000,000	5		4,080,000	Jan. 1895	.05
153	Monarch, g.	Colo.	1,000,000	1,000,000	1	120,000	120,000	April 1900	.12
154	Montana Coal & Coke.	Mont.	5,000,000	200 000	25	60,000	60,000	April 1900	.30
155	Montana, Ltd., g. s.	Mont.	3,300,000	657,128	5		453,700	April 1899	.12
156	Montana Ore Purchas'g.	Mont.	2,500,000	80,000	25	80,000	1,440,000	Feb. 1900	1.00
157	Montreal, g.	Colo.	1,000,000	1,000,000	1				
158	Monument, g.	Colo.	300,000	300,000	1		18,124	Nov. 1899	.01
159	Moon-Anchor Con., g.	Colo.	1,750,000	600,000	1		216,000	Nov. 1898	.07½
160	Moose, g.	Colo.	600,000	600,000	1		186,000	Feb. 1896	.01
161	Morning Star Drift, g.	Cal.	240,000	2,400	100		847,200	Nov. 1899	10.00
162	Morse, g.	Colo.	1,250,000	1,250,000	1		215,650	May. 1899	.12
163	Mountain Beauty, g.	Colo.	2,000,000	2 000,000	1				
164	Mountain Copper.	Cal.	6,250,000	250,000	25	660,000	1,833,750	April. 1900	2.64
165	Mt. Rosa, g.	Colo.	1,000,000	1,000,000	1		75,000	Dec. 1899	.04
166	Mt. Shasta	Cal.	100,000	20,000	5		6,000	May. 1899	.30
167	Moulton	Mont.	2,000,000	400,000	5		500,000	Oct. 1899	.05
168	Napa Con., q.	Cal.	700,000	100,000	7	40,000	1,080,000	April. 1900	.20
169	National Lead, com.	U. S.	15,000,000	149,054	100	149,054	1,341,486	Mar. 1900	1.00
170	National Lead, pf.	U. S.	15,000,000	149,040	100	260,820	9,796,820	Mar. 1900	1.75
171	New Central Coal.	Md.	1,000,000	50,000	20	20,000	490,000	April 1900	.40
172	New Idria, q.	Cal.	500,000	100,000	5	40,000	210,000	April 1900	.20
173	N. J. & Mo. Zinc.	Mo.	500,000	30,000	10	5,000	5,000	April 1900	.10
174	New York Zinc	Mo.	700,000	28,000	25	28,000	49,000	April 1900	.25
175	N. Y. & Hon Rosario, s.g.	C. A.	1,500,000	150,000	10	60,000	1,222,000	April 1900	.10
176	North Star Mines of N.J.	Cal.	5,000,000	250,000	10		50,000	Nov. 1899	.20
177	Nugget.	Colo.	1,000,000	1,000,000	1		35,000	Aug. 1898	.00½
178	Okanogan, g.	Wash	62,500	1,250,000	05		3,125	Oct. 1899	.00¼
179	Ontario, s. l.	Utah.	15,000,000	150,000	100	90,000	13,662,500	April. 1900	.30
180	Ophir, g.	Col.	700,000	700,000	1				
181	Orphan Belle, g.	Colo.	1,000,000	1,000,000	1		197,899	Dec. 1899	.09
182	Original Empire, g.	Cal.	5,000,000	50,000	100		500,000	May. 1899	1.00
183	Osceola, c.	Mich.	2,500,000	93,000	25		3,080,500	Dec. 1899	3.00
184	Pacific Coast Borax.	Cal.	2,000,000	20,000	100	100,000	522,500	Dec. 1900	5.00
185	Parrot, c.	Mont.	2,300,000	230,000	10	345,000	3,380,898	Jan. 1900	1.50
186	Pennsylvania Coal.	Pa.	5,000,000	100,000	50		4,050,000	May. 1899	8.00
187	Pennsylvania Con.	Cal.	5,150,000	51,500	100	20,600	156,175	April. 1900	.10
188	Pennsylvania Steel, pf.	Pa.	1,500,000	15,000	100	26,250	52,500	Jan. 1900	1.75
189	Petro, g.	Utah.	1,000,000	200,000	5		32,000	Oct. 1899	.02½
190	Pharmacist Con., g.	Colo.	1,500,000	1,500,000	1		84,000	Jan. 1898	.01
191	Pinnacle, g.	Colo.	2,000,000	2,000,000	1				
192	Pioneer, g.	Cal.	1,000,000	100,000	10		62,500	Mar. 1899	.12½
193	Pittsburg Coal, pf.	Pa.	32,000,000	308,000	100	539,000	539,000	Jan. 1900	1.75
194	Plumas Eureka, g.	Cal.	1,406,250	140,625	10		2,713,169	Oct. 1896	.12
195	Portland, g.	Colo.	3,000,000	3,000,000	1	270,000	2,827,080	April. 1900	.02
196	Princess, g.	Colo.	1,000,000	1,000,000	1		45,000	May. 1896	.01
197	Prince Albert, g.	Colo.	3,000,000	3,000,000	1				
198	Queen Bess Propr., s. l.	B.Col	500,000	100,000	5		25,000	July. 1899	.12½
199	Quicksilver, pref.	Cal.	4,300,000	43,000	100		1,845,411	May. 1899	.50
200	Quincy, c.	Mich.	2,500,000	100,000	25	500,000	11,570,000	Feb. 1900	5.00
201	Rambler—Cariboo, s. l.	B.Col	1,000,000	1,000,000	1		60,000	Dec. 1899	.01
202	Raven, g.	Colo.	1,500,000	1,000,000	1	30,000	99,500	Mar. 1900	.01
203	Reco, s. l.	B.Col	1,000,000	1,000,000	1		297,500	Jan. 1898	.10
204	Republic Con., g.	Wash	3,500,000	3,500,000	1	105,000	382,500	Mar. 1900	.01
205	Republic Iron & Steel, pf	U. S.	25,000,000	212,570	100	371,997	1,215,992	April. 1900	1.75
206	Reward, g.	Cal.	1,000,000	100,000	10		20,000	Aug. 1899	.20
207	Russell-Irwin, z.	Mo.	250,000	25,000	10		15,000	Oct. 1899	.10
208	Sacramento, g.	Utah.	5,000,000	1,000,000	5		138,000	Oct. 1899	.00½
209	St. Joseph, l.	Mo.	3,000,000	300,000	10	37,500	2,934,500	Mar. 1900	.50
210	Seventy-Six, g. s.	Colo.	1,000,000	200,000	5		2,950	Mar. 1898	.01
211	Santa Rosalia, g.s.	Cal.	100,000	100,000	1		130,000	Oct. 1899	.05
212	Silver King, g. s. l.	Utah.	300,000	150,000	20	300,000	2,750,000	April. 1900	.50
213	Small Hopes, s.	Colo.	5,000 000	250,000	20		3,325,000	Feb. 1899	.10
214	Smuggler, s. l. z.	Colo.	1,000,000	1,000,000	1	270,000	1,455,000	April. 1900	.06
215	South Eureka, g.	Cal.	1,500,000	300,000	5		12,000	May. 1898	.04
216	South Swansea, s. l.	Utah.	150,000	150,000	1		165,000	Oct. 1899	.05
217	Specimen, g.	Colo.	1,200,000	1,200,000	1				
218	Squaw Mountain, g.	Colo.	2,000,000	2,000,000	1		10,000	Nov. 1899	.00½
219	Standard Con., g. s.	Cal.	2,000,000	200,000	10	20,000	3,919,226	Feb. 1900	.10
220	Standard	Idaho	500,000	500,000	1		1,745,000	April. 1899	.06
221	Stratton's Independ'ce.	Colo.	5,500,000	1,000,000	5	480,000	1,440,000	Feb. 1900	.48
222	Strong, g.	Colo.	2,500,000	2,500,000	1	100,000	950,000	April. 1900	.01
223	Swansea, s. l.	Utah.	500,000	100,000	5	25,000	226,500	April. 1900	.05
224	Tamarack, c.	Mich.	1,500,000	60,000	25		6,270,000	Dec. 1899	6.00
225	Temonj, g.	Colo.	1,000,000	1,000,000	1				
226	Tomboy, g.	Colo.	1,500,000	300,000	5		812,000	Dec. 1899	.24
227	Tornado, g.	Colo.	1,000,000	1 000,000	1				
228	Touraine, g.	Colo.	1,250,000	1,250,000	1	87,500	87,500	April. 1900	.07
229	Union, g.	Colo.	1,250,000	1,250,000	1		82,744	June. 1896	.01
230	Union Leasing	Colo.	1,000,000	1,000,000	1		336,000	July. 1895	.04
231	United, z. l., pref.	Mo.	1,000,000	40,000	25	40,000	80,000	April. 1900	.50
232	United Verde, c.	Ariz.	3,000,000	300,000	10	600,000	1,462,500	April. 1900	.50
233	Utah	Utah.	1,000,000	100,000	10		179,000	Jan. 1899	.02
234	Victor, g.	Colo.	1,000,000	200,000	5		1,155,000	Dec. 1898	.50
235	Vindicator, Con., g.	Colo.	1,500,000	1,065,000	1	106,500	411,000	April. 1900	.05
236	War Eagle Con.	B. C.	2,000,000	1,750,000	1	52,500	545,250	Feb. 1900	.01½
237	What Cheer, z.	Mo.	225,000	22,500	10	4,500	9,000	Feb. 1900	.20
238	Wolverine, c.	Mich.	1,500,000	60,000	25	120,000	390,000	April. 1900	2.00
239	Work, g.	Colo.	1,500,000	1,500,000	1				
240	Yellow Aster, g.	Cal.	1,000,000	100,000	10	80,000	403,789	April. 1900	.20
241	Ymir, g.	B.Col	1,000,000	125,000	5		30,000	Nov. 1899	.24
242	Zenobia, g.	Colo.	1,000,000	1,000,000	1		10,000	Feb. 1898	.01

G., Gold. S., Silver. L., Lead. C., Copper. Z., Zinc. This table is corrected up to April 26th. Correspondents are requested to forward changes or additions.

CHEMICALS, MINERALS, RARE ELEMENTS, ETC.—CURRENT PRICES.

	Cust. Meas.	Price.
Abrasives—		
Carborundum, f.o.b. Niagara Falls, Powd., F. FF. FFF	lb.	$0.10
Minute No. 1	"	.15
No. 15	"	1.00
Corundum, N. C.	"	.07@.10
Chester, Mass.	"	.04½@.05
Emery, Turkish flour	"	.03
Grains	"	.05
Naxos flour	"	.03
Grains	"	.05
Chester flour	"	.03
Grains	"	.05
Peekskill flour	"	.01¾
Grains	"	.02½
Crude, Kuluk, best	lg. ton	18.50
Levant, "	"	22.00
Naxos (Greek) best	"	26.00
Pumice Stone, Am. powd.	lb.	.01½@.02
Italian, powdered	"	.01¼
Lump, per quality	"	.04@.40
Rottenstone, ground	"	.02¼@.03
Lump, per quality	"	.05@.14
Rouge, per quality	"	.12@.30
Acids—Acetic, 30% pure	100 lbs.	3.50
30% ch. pure	"	6.00
80% pure	"	7.50
Benzoic, English	oz.	.12¼
German	lb.	.46
Boracic, cryst.	"	.10
Powdered	"	.10¼
Carbolic, crude, 60%	gal.	.28
Cryst. 35%	lb.	.36
Liquid, 95%	gal.	.40
Carbonic, liquid	lb.	.12½
Chromic, crude	"	.20
Chem. pure	"	.50
Absol. ch. pure	"	1.75
Hydrochloric, ch. pure	"	.07
Hydrofluoric, 36%	"	03
48%	"	05
Best	"	.25
Nitric, chem. pure	"	.09
Sulphuric, 98%	"	.01½
Chem. pure	"	.07
Tartaric, cryst.	"	.32
Powder	"	.32½
Alcohol—Grain	gal.	2.40
Refined wood, 95@97%	"	.90@.95
Purified	"	1.20
Alum—Lump	100 lbs.	1.75
Ground	"	1.85
Chrome, com'l	"	2.75@3.00
Aluminum—Nitrate	lb.	1.50
Oxide, com'l, common	"	.06½
Best	"	.20
Pure	"	.80
Hydrated	"	.05
Sulphate, pure	"	1.50
Com'l	"	.01¼
Ammonia—Aqua, 16°	"	.03¼
18°	"	.03¾
20°	"	.04
22°	"	.05¾
Ammonium—		
Bromide, pure	"	.52@.53
Carbonate lump	"	.08¼@.08¾
Powdered	"	.09¼@.09¾
Muriate, gran.	"	.06½
Lump	"	09¼
Nitrate, white, pure (99%)	"	.10½
Phosphate, com'l	"	.12
Chem. pure	"	60
Antimony—		
Glass	"	.30@.40
Needle, lump	"	.05½@.06
Powdered, ordinary	"	.05¾
Best	"	.08½
Oxide, com'l white, 95%	"	.09¼
Com'l white, 99%	"	.12
Com'l gray	"	.07
Sulphuret, com'l	"	.16
Arsenic—White	"	4.70@4.75
Red	"	.07¾@.08
Asphaltum—		
Ventura, Cal.	sh. ton	32.00
Cuban	lb.	.01½@.03¼
Egyptian, crude	"	.05½@.06
Trinidad, refined	lg. ton	30.00@35.00
San Valentino	lg. ton	15.00
Seyssel (French) mastic	sh. ton	21.00
Gilsonite, Utah, ordinary	lb.	.03
Select	"	.03¾
Barrum—Carbonate, Lump, 80@90%	sh. ton	25.00@27.50
92@98%	"	26.00@29.00
Powdered, 80@90%	lb.	.01¾@02
Chloride, com'l	"	.02@.02¼
Chem. pure cryst	"	.05
Nitrate, powdered	"	.06
Oxide, com'l, hyd. cryst	"	.18
Hydrated, pure cryst.	"	.25
Pure, powd.	"	.27
Sulphate	"	.01
Barytes—Am. Cr., No. 1	sh. ton	9.00
Crude, No. 2	"	8.00
Crude, No. 3	"	7.75
Am. Floated	"	14.50@17.50
German, gray	"	14.50
Snow white	"	17.50
Bauxite—Ga. mines: 1st grade	lg. ton.	5.00@5.10
Second grade	"	4.00@4.50
Ala., f.o.b., 1st grade	"	5.00
Second grade	"	3.85
Bismuth—Oxide, hydr.	lb	2.25@2.30
Subnitrate	"	1.30@1.35
Bitumen, "B"	"	.03½
"A"	"	.05
"A" and "B"	"	.04½
Bone Ash	"	02¾@.03½
Borax—Cryst. and pow'd	"	.07¼@.07½
Bromine—Bulk	"	.45
Cadmium—Metallic	"	1.40
Acetate, pure white	100 lbs.	1.00
Sulphate	"	2.00@2.50
Calcium—	Cust. Meas.	Price.
Acetate, gray	100 lbs.	$1.55
" brown	"	1.10
Carbide, ton lots, f. o. b. Niagara Falls, N.Y.	sh. ton	75.00
Carbonate, ppt.	lb.	.05
Chloride, com'l	100 lbs.	.95
Best	"	1.90
Sulphite	lb.	.05
Cement—		
Portland, Am., 400 lbs.	bbl.	1.50@2.00
Belgium	"	1.95@2.20
English	"	2.45@2.55
German	"	2.30@2.70
"Rosendale," 300 lbs.	"	1.10
Sand cement, 400 lbs.	"	1.55@1.95
Slag cement, imported	"	1.65
Ceresine—		
Orange and Yellow	lb.	.12
White	"	.14
Chalk—Lump, bulk	sh. ton	2.15
Precipitated	lb.	.05
French	"	.03
Chlorine—Liquid	"	.28
Water	"	.15
Chrome Ore—		
(50% chrome) ex-ship	lg. ton	20.00@20.50
Sand	"	35.00
Bricks, f.o.b., Pittsburg	M	175.00
Clay, China—Am. com. ex-dock, N. Y.	lg ton	8.00
Am. best, ex-dock, N. Y.	"	9.00
English, common	"	12 00
Best grade	"	17 00
Slip Clay	sh. ton.	5.00
Coal Tar Pitch	gal.	.08
Cobalt—Carbonate	lb.	1.50
Nitrate	"	1.30
Oxide—Black	"	2.00
Gray	"	2.50
Smalt, blue ordinary	"	.20
Best	"	.30
Chem. pure	"	5.00
Copperas	100 lbs.	.72½
Copper—Carbonate	lb.	.18
Chloride	"	.25
Nitrate, crystals	"	.35
Oxide, com'l	"	.19
Cream of Tartar—Crys.	"	.22½
Granulated	"	.22½
Powdered	"	.23½
Cryolite	"	.06½
Explosives—		
Blasting powder, A. 25 lb.	keg	2.50
Blasting powder, B.	"	1.25
"Rackarock," A	lb.	.25
"Rackarock," B	"	.18
Judson R.R. powder	"	.10
Dynamite (30% nitro-glycerine)	"	.13
(30% nitro-glycerine)	"	.14
(40% nitro-glycerine)	"	.15
(50% nitro-glycerine)	"	.17
(60% nitro-glycerine)	"	.19
(75% nitro-glycerine)	"	.22
Glycerine for nitro (32 2-10° Be.)	"	.13¼@.13¼
Feldspar—Ground	sh. ton	8.00@9.00
Flint—(See Silica).		
Fluorspar—		
Am. lump, 1st grade	"	12.90
2d grade	"	12.40
Gravel & crushed, 1st g	"	11.90
2d grade	"	11.00
Ground, 1st grade	"	16.40
Foreign, lump	"	8.00@12.00
Ground	"	11.50@14.00
Fuller's Earth—Lump	100 lbs.	.75
Powdered	"	.85
Refined lump	"	1.25
Ganister Rock	lg. ton.	6.50
Gypsum—Ground	sh. ton	8.00@8.50
Fertilizer	"	7.00
Rock	lg. ton	4.00
English and French	"	14.00@16.00
Infusorial Earth—Ground. American, best	"	20.00
French	"	37.50
German	"	40.00
Iodine—		
Crude	100 lbs.	2.45
Resublimed	"	2.85
Iron—		
Muriate	lb.	.05
Nitrate, com'l	"	.01
True	"	.03¾
Oxide, pure copperas col	"	.05@.10
Purple-brown	"	.02
Venetian red	"	.01@.01½
Scale	"	.01@.03
Kaolin—(See Clay, China).		
Kryolith—(See Cryolite.)		
Lead—		
Acetate, white	lb.	.07
Com'l, broken	"	.06½
Brown	"	.05½
Nitrate, com'l	"	.06½
" gran	"	.8¼
Lime—Bldg., ab. 250 lbs	bbl.	.90
Finishing	"	1.00
Magnesite—		
Crude, lump (95%) Greece	lg. ton	7.00@7.50
Calcined (Greece)	sh. ton	16.50
Bricks (Greece)	M.	170.00
Bricks, Am., f.o.b. Pittsburg	M.	175.00
Magnesium—		
Carbonate, light, fine pd	lb.	.03¾
Blocks	"	.06@.09
Chloride, com'l	"	.01¾
Fused	"	.20
Nitrate	"	.60
Manganese—Crude, pow'd 70@75% binoxide	"	.01¼@.01½
Crude, pow'd 75@85% binoxide	"	.01½@.02½
85@90% binoxide	"	.02½@.03¼
Manganese—	Cust. Meas.	Price.
Crude-pow'd 90@95% binoxide	lb.	.02¾@.05½
Carbonate	"	.16@.20
Chloride	"	.04
Ore, 50%, Foreign	unit	.24@.24½
Domestic	"	.30
Marble—Flour	sh. ton	5.50@6.00
Mercury—		
Bichloride	lb.	.74
Mica—N. Y. gr'nd, coarse	"	.04@.05
Fine	"	.06@.06½
Sheets, 1½x3 in.	"	.60
8x10 in.	"	18.00
Mineral Wool—		
Slag, ordinary	100 lbs.	.90
Selected	"	1.40
Extra	"	3.00
Rock, ordinary	sh. ton	32.00
Selected	"	40.00
Extra	"	50.00
Monazite—92%	"	140.00
Nickel—Oxide, No. 1	lb.	1.00
No. 2	"	.60
Sulphate	"	.13@.13½
Oils—Black, reduced 29 gr.		
25@30 cold test	gal.	.11@.11½
15, cold test	"	.12@.12½
Zero	"	.13@.14
Summer	"	.10½@.11
Cylinder, dark steam ref	"	.10@.15
Dark filtered	"	.13@.18
Light filtered	"	.16@.19
Extra cold test	"	.23@.28
Gasolene, 86°@90°	"	.16@.21
Naphtha, crude 68@72°	"	10.65
"Stove"	"	.13
Linseed, domestic raw	"	.62@.63
Boiled	"	.61@.65
Calcutta, raw	"	.71
Graphite, lubricating, Am. dry	lb.	.10
In oil	"	.12
Axle grease	"	.08½@.10
Wood grease	"	.05@.06
Ozokerite—Foreign	"	.09
Paints and Colors—		
Benzine, Sumatra	"	.35@.40
Marbled	"	.27
Chrome green, common	"	.05
Extra	"	.10@.12
Yellow, common	"	.10
Best	"	.25
Silica Graphite, thick	"	.12
Thinned	gal.	1.15
Lampblack, com'l	lb.	.03
Refined	"	.08
Calcined	"	.12@.20
Fine spirit	"	.20@.35
Litharge, Am. powd.	"	.06½
English flake	"	.09½
Glassmakers, Foreign	"	.06½
Metallic, brown	sh. ton	16.00@19.50
Red	"	16.00
Ocher, Am. common	"	9.25@10.00
Best	"	21.25@25.00
Dutch, washed	lb.	.04¾
French, washed	"	.01¼@.02½
Orange mineral, Am.	"	.08¼@.08½
Foreign, as to make	"	.09½@.11¼
Paris green, pure, bulk	"	.12½@.13
Red lead, American	"	.06½
Foreign	"	.08¼
Shellac, "D. C."	"	.27
Native	"	.14½
Turpentine, spirits	gal.	.56½
Ultramarine, best	lb.	.25
Vermilion, Amer. lead	"	.14
Quicksilver	"	.69
Chinese	"	.85
English, imported	"	.71
White lead, Am., dry	"	.05¾
In oil	"	.06½
English	"	.06½@.06¾
Whiting, common	100 lbs.	.40
Gilders	"	.54
Zinc white, Am., ex. dry	lb.	.04¾@.05¼
American, red seal	"	.07¼@.07¾
Green seal	"	.07⅜@.08
Foreign, red seal, dry	"	.06¼@.06¾
Green seal, dry	"	.06¾@.06⅞
Foreign, in oil	"	.10½@.11¾
Plumbago—		
Am. lump, f. o. b. Providence, R. I.	sh. ton	8.00
Am. pulv., f. o. b. Providence, R. I.	"	30.00
German, lump	lb.	.01¼
Pulverized	"	.02
Ceylon, pulv. common	"	.04
Best	"	.06@.08
Italian, pulv	"	.01¼
Potash—		
Caustic, ord.	"	.06@.06¼
Elect. (90%)	"	.06½
Potassium—		
Bicarbonate cryst.	"	.08¼
Powdered or gran	"	.12
Bichromate	"	.09
Bromide	"	.46
Carbonate, 96@98%	"	.05½
Com'l	"	.03½
Chromate	"	.35
Cyanide (98@99%)	"	.28@.29
Iodide, bulk	"	2.30
Permanganate, pure cr.	"	.14
Prussiate, yellow	"	.18½@.19
Red	"	.37
Silicate	"	.06
Sulphide, com'l	"	.10
Quartz—(See Silica).		
Rosin—		
Com. strained (280 lbs.)	bbl.	1.70
Best strained	"	3.50
Medium	"	2.00
Salt—		
N.Y. com. fine	sh. ton	2.00
Salt—N. Y. agricultural	sh. ton	$1.50
Saltpeter—Crude	100 lbs.	3.55@3.62½
Refined	"	4.50
Samarskite	lb.	1.00
Silica—Best foreign	lg. ton	10.00@11.00
Ground quartz, ord.	sh. ton	6.00@8.00
Best	"	12.00@13.00
Lump quartz	"	2.50@4.00
Glass sand	"	2.75
Fire bricks (Blue Welch)	M.	35.00
Silver—Chloride	oz.	.65
Nitrate	"	.40
Oxide	"	.85@1.10
Slate—Ground	sh. ton	7.50@8.75
Sodium—Acetate, com'l	lb.	.04¾
Bichromate	"	.06¾@.06½
Bromide	"	.50
Hyposulphite	100 lbs.	1.70@1.80
Nitrite, 96@98%	lb.	.08
Peroxide	"	.45
Phosphate	"	.02½
Prussiate	"	.14¼
Triphosphate	"	.04
Silicate, conc com'l	"	.05½
Sulphate, gran., puri'd.	"	.02¾
Sulphide	"	.03¾
Sulphite	"	.02½
Tungstate, com'l	"	.35
Pure	"	.50
Strontium—Nitrate	"	.08
Sulphur—Roll	100 lbs.	1.75
Flour	"	1.85
Flowers, sublimed	"	2.05
Talc—N. C., 1st grade	sh. ton	13.75
N. Y., Fibrous	"	8.00@9.00
French	lg. ton	16.00
Italian	100 lbs.	1.50@2.00
Tin—Bichloride	lb.	.09½@.10
Crystals	"	.22¼
Muriate, 36°	"	.06
Muriate, 52°	"	.15
Oxide, white, ch. pure	"	.41
Uranium—Oxide	"	1.80@3.00
Zinc—Metallic, ch. pure	"	.09
Carbonate	"	.15
Chloride	"	.05¼
Dust	"	.07¼
Sulphate	"	.02@.02⅝

THE RARE ELEMENTS.

Prices given are at makers' works in Germany, unless otherwise noted.

	Cust. Meas.	Price.
Barium—Amalgam	grm.	$1.19
Electrol	"	5 71
Beryllium—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	lb.	32.00
Boron—Amorphous, pure	grm.	.19
Crystals, pure	"	1.43
Nitrate (N. Y.)	lb.	1.50
Cadmium	kg.	1.90
Calcium	grm.	4.28@5.95
Cerium—Fused	grm.	1.02
Nitrate (N. Y.)	lb.	17.00
Chromium—Fused, Elect.	kg.	5.95
Pure powder 95%	"	1.79
Chem. pure cryst	grm.	.26
Cobalt—(98@99%)	kg.	6.31@7.85
Pure	"	30.94
Didymium—Nitrate (N.Y.)	lb.	60.00
Erbium	grm.	3.09
Nitrate (N. Y.)	lb.	62.00
Germanium—Powder	grm.	33.32
Fused	"	35.70
Glucinum—Powder	"	5.95
Crystals	"	9.04
Nitrate (N. Y.)	oz.	2.50
Indium	grm.	4.05
Iridium—	"	1.43
Lanthanum—Powder	"	4.28
Electrol, in globules	"	9.04
Nitrate (N. Y.)	lb.	57.00
Lithium	grm.	2.38
Nitrate (N. Y.)	oz.	.60
Magnesium—In bars	kg.	6.19
In wire	"	9.99
Powdered	"	5.71@6.90
Molybdenum—Fused	grm.	.30
Powder, 95%	kg.	2.62
Niobium	grm.	3.81
Osmium	"	.95
Palladium—Wire	"	.95
Sponge	"	71
Potassium—In balls	kg.	17.85
Rhodium	grm.	2.62
Rubidium—Pure	"	4.76
Ruthenium—Powder	"	2.38
Rutile—Crude	kg.	.43
Selenium—Com'l powder	"	33.32
Sublimed powder	"	42.84
Sticks	"	35.70
Silicium—Com'l	"	28.56
Pure crystals	"	59.50
Sodium (N. Y.)	lb.	.75
Strontium—Electrol	grm.	6.19
Tantalum—Pure	"	3.57
Tellurium—Ch. p. sticks	kg.	119.00
Powder	"	95.20
Thallium	"	26.18
Thorium—Metallic	grm.	7.85
Nitrate 49@50% (N. Y.)	lb.	4.75
Titanium	kg.	47.60
Uranium	"	190.40
Nitrate (N. Y.)	oz.	.25
Vanadium—Fused	grm.	1.19
Wolfram—Fused, elect.	kg.	238.00
Powder, 95@98%	"	1.67
Purest, powder	"	6.43
Yttrium	grm.	2.38
Nitrate (N. Y.)	lb.	62.00
Zirconium—Com'l	kg.	119.00
Nitrate (N. Y.)	lb.	9.00

NOTE.—These quotations are for wholesale lots in New York unless otherwise specified, and are generally subject to the usual trade discounts. This table is revised up to April 16. Readers of the ENGINEERING AND MINING JOURNAL are requested to report any corrections needed, or to suggest additions which they may consider advisable. See also Market Reviews.